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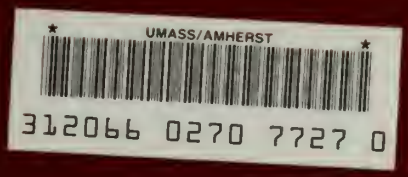

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Metropolitan Planning Organization

Transportation Improvement Program 1987-1991

Endorsed by the Metropolitan Planning Organization

December 1986

This document was prepared by CENTRAL TRANSPORTATION PLANNING STAFF, an interagency transportation planning staff created and directed by the Metropolitan Planning Organization, consisting of the member agencies.

Executive Office of Transportation and Construction
Massachusetts Bay Transportation Authority
Massachusetts Department of Public Works
MBTA Advisory Board
Massachusetts Port Authority
Metropolitan Area Planning Council

General Relationships of the Major Elements
Required for Federal Certification Under the
Urban Transportation Planning Process

Unified Planning Work Program

- description of work performed at the planning or problem definition (more general analysis) stage.

Transportation Plan

- description of the long-range govenmental policies that lead to major capital improvements to the region's existing transportation system and a description of the short-range governmental policies that lead to operational improvements to the region's existing transportation system.

Transportation Improvement Program

- description of projects that would be eligible for the implementation stage in the current fiscal year and a description of projects that would be eligible for the implementation stage in the next 2-5 years.

FY 1987 TRANSPORTATION IMPROVEMENT PROGRAM

Table of Contents

		PAGE
I.	INTRODUCTION	1
	1. Coordination with Regional Transportation Planning	1
	2. Consistency with Other Federal Regulations	2
	3. Annual Review and Amendment Process	4
	4. Funding Sources, Transit Element	6
	5. MBTA's Capital Budget Process	9
	6. Transit Priorities	10
	7. Funding Sources, Highway Element	11
	8. Classification of Highway Projects	12
	9. Using the TIP - General Information	13
II.	TRANSIT ELEMENT	17
	1. Efficiency Projects	18
	2. Renovation Projects	21
	3. Replacement Projects	33
	4. Expansion Projects	39
	5. Other Projects and Programs	48
	6. Transit Capital Program Summary	51
III.	HIGHWAY ELEMENT	55
	1. Interstate	56
	2. Interstate Resurfacing (4R)	58
	3. Consolidated Primary	61
	4. Rural Secondary	64
	5. Urban Systems, City of Boston	65
	6. Urban Systems, Boston Urbanized Area	67
	7. Highway Bridge Replacement and Rehabilitation	75
	8. Hazard Elimination	91
	9. Interstate Transfer	93
	10. Undetermined	97
	11. Highway Capital Program Summary	98
IV.	APPENDIX	101
	1. Abbreviations and Acronyms Used in the TIP	101
	2. Graphics of Major Projects	103
	3. Air Quality Analysis	113
	4. Index of Highway Projects in the TIP by Community	114
	5. State Funded Projects (Non-Federal Aid)	127

FY 1987 TRANSPORTATION IMPROVEMENT PROGRAM

List of Figures

FIGURE NO.	TITLE	PAGE
1	Major Highway Improvements North Shore	104
2	Major Highway Improvements North	105
3	Major Highway Improvements Northwest	106
4	Major Highway Improvements West	107
5	Major Highway Improvements Southwest	108
6	Major Highway Improvements South Shore	109
7	Major Highway Improvements Core	110
8	MBTA Rapid Transit Improvements	111
9	Commuter Rail Network	112

I. INTRODUCTION

The Transportation Improvement Program (TIP) is a staged, five-year program of improvement projects which are consistent with the Transportation Plan developed for the Boston region's highway and public transportation systems. Projects listed in the TIP are expected to be candidates for federal funding of their implementation at some point over the next five fiscal years. Projects listed in the Annual Element are expected to be ready for implementation funds during federal Fiscal Year 1987 (October 1, 1986 - September 30, 1987). Projects that are not programmed to receive federal funds during the five-year period covered by this TIP are included for information only. In addition, projects scheduled for implementation with local or state funds only are listed in section IV.5 in order to give a complete picture of regional projects and their programming.

The TIP is developed and updated annually under the direction of the Metropolitan Planning Organization (MPO), in cooperation with state and local officials. The TIP has been produced in compliance with the requirements of Part 450, Subpart C of Chapter 23 of the Code of Federal Regulations, effective August 1, 1983. These requirements were established jointly by the Federal Highway Administration (FHWA) and the Urban Mass Transportation Administration (UMTA).

I.1 COORDINATION WITH REGIONAL TRANSPORTATION PLANNING

Projects in the Fiscal Year 1987 TIP are consistent with the current Transportation Plan for the Boston Region, 1983, and coordinate with the MBTA's Program for Mass Transportation.

Relationship to the Transportation Plan

The Transportation Plan is the region's statement of basic transportation policy for both highway and transit projects. The plan is the first step in the process of assessing future need, selecting transportation projects, and stating intentions for future development. Furthermore, the document provides a focal point for the discussion and clarification of the policy which guides the transportation decision-making process.

The plan contains both long- and short-range components. The long-range components address the future transportation needs of the region and identify major changes in the transportation system and the policies which might guide their development. The short-range components of the plan are Transportation Systems

Management (TSM) projects which promote the efficient use of existing facilities. The goal of TSM is to insure, through the use of management techniques and low cost capital projects, that the region's transportation system is being used to its fullest extent before new facilities are added. Capital elements of TSM projects will be included in the TIP.

In the past, the Boston region prepared the Transportation Plan as two separate documents, one dealing with long-range planning and the other with Transportation Systems Management. The present plan integrates the two strategies as complementary means of achieving regional goals.

Relationship to the Program for Mass Transportation

Chapter 161A of the Massachusetts General Laws requires the Executive Office of Transportation and Construction (EOTC) to prepare a Program for Mass Transportation (PMT) for the area included in the Massachusetts Bay Transportation Authority (MBTA) district. The TIP has been prepared to be fully consistent with the Program for Mass Transportation, as approved by the MBTA Advisory Board in December 1978. When the continuing transportation planning and implementation process results in significant changes to the program elements included in the PMT, it will be revised in accordance with state law, so that the document remains consistent.

I.2 CONSISTENCY WITH OTHER FEDERAL REGULATIONS

Private Sector Initiative

The Massachusetts Bay Transportation Authority in compliance with UMTA directives is formulating a policy which address the following four (4) major points:

1. Involve private operators at an early stage in planning for new or restructured service,

2. Establish objective criteria for judging any service proposals that are received from private entrepreneurs,

3. Provide a fair means for resolving disputes over service decisions, and

4. Periodically examine existing service to determine where opportunities may exist for private enterprise participation.

This policy will explain the opportunities and resources within the MBTA for private sector participation. The MBTA expects to formulate a formal policy and initiate its implementation in FY 1987.

Section 504

Section 504 of the Rehabilitation Act of 1973 provides that "No otherwise qualified handicapped individual . . . shall, solely by reason of his handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."

In carrying out the requirements of Section 504, the U. S. Department of Transportation originally ruled that mass transit systems which receive federal capital or operating assistance must become fully accessible to handicapped persons. However, a federal court decision held that Section 504 did not authorize this requirement.

On May 23, 1986, the U. S. Department of Transportation issued a final rule which requires that recipients of financial assistance for urban mass transportation establish programs to provide transit services to handicapped persons. The service must meet certain service criteria, which the rule defines. Recipients may fulfill their obligations by choosing either a special service or an accessible bus system, or a system which mixes both elements. The final rule does not require that rail rapid transit services in urban areas be made accessible. However, the U. S. DOT has also published proposed requirements for service to handicapped persons on commuter rail systems. The U. S. DOT has not decided what, if any, commuter rail requirements it should promulgate. It has proposed for comment various alternative provisions on important commuter rail issues.

There is no formal requirement that the TIP demonstrate or certify its consistency with Section 504. However, the production of the TIP is a part of the urban transportation planning process, and Federal regulations require that this process contain special efforts to plan public mass transportation facilities and services that can effectively be utilized by elderly and handicapped persons.

The Transit Element of this document contains descriptions of the 16(b)(2) Program and the Handicapped Accessibility Program. Both of these make public transportation services available to patrons with special needs.

Consistency with the Transportation Element of the State Implementation Plan

The 1977 Amendments to the Clean Air Act require state and local governments to prepare plans for achieving compliance with the national air quality standards established by the Clean Air Act. As set forth in the State Implementation Plan (SIP), the MPO, in conjunction with the Department of Environmental Quality Engineering, is required to make an annual determination that the region's transportation plans and projects are consistent with

the SIP. The TIP Annual Element Highway projects have been examined to determine which projects significantly affect highway capacity or operating speeds. Those that do have been further analyzed and their air quality impact--whether good or bad--has been estimated. The region is consistent with the TE/SIP as long as the sum of these impacts shows an overall reduction in pollutants emitted.

I.3 ANNUAL REVIEW AND AMENDMENT PROCESS

The Transportation Improvement Program is prepared several months prior to the beginning of the federal fiscal year. The annual revision of the document consists of a review and update of all projects shown in the TIP for the preceding fiscal year. Any amendments endorsed during the course of a fiscal year are incorporated into the annual revision of the subsequent TIP document.

The Massachusetts Bay Transportation Authority and the Massachusetts Department of Public Works (MDPW) are the two major recipients of Federal transportation funds in the Boston region. They produce proposed transit and highway elements. In addition, the Executive Office of Transportation and Construction (EOTC) provides information on funding for the Cape Ann Transportation Authority (CATA) which is also included in the transit element. The Metropolitan Area Planning Council (MAPC) might also provide information on city or town projects in which the community is the direct recipient of Federal funds. (This could only apply in the case of locally operated transit programs; the state is the only authorized recipient under the Federal highway funding programs included in the TIP.)

The Joint Regional Transportation Committee (JRTC), cities and towns in the MAPC region, and the General Court and its Joint Legislative Committee on Transportation review and comment on the proposed TIP. The SSC reviews these comments and determines the content of a final draft document.

The final draft upon JRTC recommendation is submitted to the MPO for endorsement. The endorsed TIP is then transmitted to the relevant federal and state agencies--namely FHWA, UMTA, EPA and EOCD. Current federal planning regulations require that the MPO certify that the planning process is being carried on in conformance with all applicable requirements. The MPO submits a statement to this effect when the new TIP is transmitted to FHWA and UMTA. Existence of an adequate transportation planning process is a requirement for receiving federal funds. Previous regulations made certification of the process a federal responsibility. Although the current regulations have transferred this responsibility to local and state officials, they have not relieved FHWA and UMTA of their oversight responsibilities and the necessity of making certain statutory findings.

Federal regulations allow the MPO to modify the TIP at any time as long as the process is consistent with the requirements for developing the TIP. The following describes the current amendment process which the region adopted in 1981. During the following years, some of those involved have expressed their interest in expediting the review and endorsement of the document and its amendments while still allowing adequate time for public participation. The number and timing of amendments is currently under review.

The MPO has scheduled two amendment periods during the fiscal year--February and June--to incorporate in the TIP changes in project status or funding. Non-scheduled amendments may occur as needed to respond to project schedule changes. Amendments follow a review process similar to that described earlier.

Amendments to the Transit Element generally take the form of refinement of estimated costs when actual costs become known and minor changes in the scheduling of programs or program elements (projects).

An amendment to the Highway Element is required when:

- A project is dropped.
- A project is moved either into or out of the Annual Element.
- A new project is added to the TIP. This often occurs when a project already under development is changed from state or local funding to federal aid.
- A later stage of project activity is programmed; e.g., right-of-way acquisition or construction is programmed for a project previously authorized for preliminary engineering only.

The MPO has determined that the responsible agency may make the following administrative, project programming changes without a TIP amendment.

- The federal funding category of a project may be changed administratively, with the following exceptions:
  1. Either to or from Interstate Program funding.
  2. To Urban Systems funding. In this case, the affected municipality must concur, but a TIP amendment is not required.
- If a project activity has been programmed in the Annual Element any earlier stage of project activity may be programmed or altered administratively.

When any of the above administrative changes are made, the responsible agency shall notify the MPO.

I.4 FUNDING SOURCES, TRANSIT ELEMENT

Section 3 Funds

Section 3 of the Urban Mass Transportation Act creates a discretionary funding program available for a variety of purposes commonly referred to as capital investment in public transportation equipment and facilities.

Section 3 authorizes the U. S. Secretary of Transportation to make grants or loans to assist states and local public bodies and agencies in:

- the construction of new fixed guideway systems and extensions to existing fixed guideway systems,
- the acquisition, construction, reconstruction, and improvement of facilities and equipment for use in mass transportation and its coordination with highway and other transportation.
- the introduction into public transportation service of new technology in the form of innovative and improved products:
- transportation projects which are physically or functionally related to, and enhance the effectiveness of, any mass transportation project or which create or enhance coordination between public transportation and other forms of transportation, and which also enhance urban economic development or incorporate private investment.
- the modification of equipment and fixed facilities (other than stations) affected by the Northeast Corridor rail project.

Since FY 1984, the Section 3 capital grant program has been funded by the Mass Transit Account of the Highway Trust Fund rather than from general revenues and annual appropriations. Provisions of the Surface Transportation Assistance Act of 1982 (STAA) created this source of revenue which is generated by the dedication of one penny per gallon from the Federal motor fuel tax to the fund. Section 3 provides for federal payment of up to 80 percent of the cost of approved capital improvement transit projects.

Section 3 grants are awarded on the basis of need, as determined by the UMTA Administrator, rather than through a fixed formula. This is a totally discretionary program, and it is UMTA's inten-

tion to confine its use to major investments in the transit infrastructure of urbanized areas; that is, to a range of extraordinary, rather than routine, needs. These would include rehabilitation and modernization of commuter rail and fixed guideway systems, new systems, and certain types of bus purchases and facilities for substantial upgrading or system expansion in lieu of a new fixed guideway system; and possibly maintenance garages. Section 3 would not be used for rehabilitation of buses, capital maintenance items (i.e., parts, components), or, in general, for the lower order of capital investments. UMTA expects grantees to use formula apportioned resources available under the Section 9 program (see below) for any or all eligible purposes before considering application under Section 3 for such purposes.

Interstate Transfer Funds

Another major funding source is the Interstate Transfer provision of the 1973 Highway Act. In accordance with the provisions of this act, Massachusetts withdrew several Interstate highway segments proposed for construction in Boston, Cambridge, and Somerville and made the $600 million that would have been spent for these highways available for transit construction. Later amendments to the Highway Act, sponsored in part by the Massachusetts delegation to Congress, increased this amount to account for inflation. The actual amount of transfer funds is increased periodically to account for increases in construction costs. From this program, all funds have been committed, as of October 1, 1981, to the Red Line Extension and Orange Line Relocation projects. These funds are expected to be drawn from the Interstate Transfer account and expended over the next several years.

Section 9 Funds

The STAA of 1982 added Section 9 to the Urban Mass Transportation Act. Section 9 provides for a block grant program that has superseded the Section 5 formula grant program. Beginning in FY 1984, the Section 9 program became the principal source of funds for routine transit capital projects, including bus purchases. The Section 9 and the Section 18 (see below) formula grant program for small urban and rural areas are funded out of annual appropriations from the general fund of the U. S. Treasury.

Section 9 block grant funds are apportioned under formulas that take into account fixed guideway and bus revenue vehicle miles, route miles, and passenger miles, as well as population and population density. The annual apportionments are computed by UMTA after funds are appropriated by the Congress.

Money apportioned under Section 9 remains available for obligation by the region for a period of three years following the

close of the fiscal year for which the funds are apportioned. Any amounts remaining unobligated at the end of this period revert to UMTA and are added to the amount available for apportionment under this section for the succeeding fiscal year.

Eligible projects include: planning, acquisition, construction, and improvement of facilities, equipment, and capital maintenance items. Capital maintenance items include any equipment and materials each of which costs at least one percent of the current cost of a comparable, new, replacement vehicle. For all these eligible projects, the federal share of net project cost is 80 percent.

UMTA expects that most routine bus capital activities will be handled by the Section 9 formula program. This includes replacement of old buses, routine expansion of bus service, normal bus facility modernization and/or construction, bus rehabilitation and purchase of related support equipment, such as computer hardware and software, radios, passenger shelters, bus stops signs, and significant spare parts, such as engines, transmissions, and air conditioning units.

Rail modernization can also be accomplished under the local formula allocation of Section 9. However, these needs are known to be substantial and UMTA anticipates that the Section 3 discretionary program will supplement these activities in areas with existing rail systems.

Some new fixed guideway construction could conceivably be accomplished under the Section 9 program, but it is unlikely that the annual apportionment would be sufficient to maintain a feasible construction schedule for a major capital investment. UMTA has warned that, should a community commence such activity with Section 9 funds, it should not presume that supplemental Section 3 funds would be forthcoming. Neither should an area anticipate that Section 3 funds would be available for routine bus projects normally financed by Section 9 but preempted by a new start project.

Although it will be a principal source of transit capital funds, Section 9 is also available for limited operating subsidies, for which the federal share of net project cost is only 50 percent. Section 9 funds used for operating assistance may not exceed the specified percentages of the Fiscal Year 1982 operating assistance apportionments under Section 5 as follows:

- Eighty (80) percent in an urbanized area of one million or more population.
- Ninety (90) percent in an urbanized area of 200,000 or more-but less than one million--population.
- Ninety-five (95) percent in an urbanized area of less than 200,000 population.

Finally, while funds are made available for planning purposes under Section 8 of the UMTA act, which supports most comprehensive planning activities, Section 9 funds can be used to carry out transit operations and maintenance planning or to supplement Section 8 funds programmed for such purposes. Also, where a comprehensive study of special interest (e.g., alternatives analyses), or of particularly high cost, demands that extra resources be considered if the planning project is to be undertaken and kept on a reasonable schedule, Section 9 funds should be used.

Section 16(b)(2) Funds

Section 16(b)(2) of the Urban Mass Transportation Act of 1964, as amended, authorizes UMTA to make capital grants to private, non-profit organizations to provide transportation services for elderly and handicapped persons, when existing mass transportation services are unavailable, insufficient, or inappropriate. These resources are distributed between states on a formula basis.

Section 18 Funds

Section 18 is a formula grant program which provides assistance to public transportation projects in non-urbanized areas. EOTC is responsible for producing and administering a statewide program of projects which fairly and equitably distributes the funds within the state and provides the maximum feasible coordination with other federally-assisted transportation services. Section 18 funds can be used for 80 percent of the cost of a capital project or for 50 percent of the net operating expense of a project or service.

I.5 MBTA'S CAPITAL BUDGET PROCESS

The MBTA's capital budget process includes four steps:

- The MBTA's Capital Budget Committee prepares a list of projects to be considered for inclusion in the Annual Element of the TIP. The list includes projects in progress, projects requested by MBTA department heads, and projects drawn from multi-year element of the Transportation Improvement Program.

- The Capital Budget Committee screens projects and project components using 14 policy criteria to establish a preliminary priority list.

- A second screening is undertaken, which involves a review of work scope, estimated cost, and project schedule. Scopes and estimates are adjusted, and projects and project components are deferred as appropriate, and a revised priority list is developed. In accordance with Chapter 161A of the Massachusetts General Laws, the MBTA submits

the resultant capital budget priorities to the Executive Office of Transportation and Construction for approval.

- The list of projects included in the Annual Element is further refined and narrowed, as the end of the federal fiscal year approaches. This refinement results from changes in the status of federal sign offs (such as Department of Labor approval), available federal funding, and changes in the status of projects and project components.

Following is a more detailed description of the process, which leads to the development and refinement of the MBTA's portion of the Annual Element.

Within the Authority, the principal responsibility for programming capital improvements and expenditures rests with the Capital Budget Committee, which is an interdepartmental committee consisting of the General Manager and Chief Executive Officer, and the directors of Construction, Operations, Railroad Operations, Materials, Budget, and Treasurer-Controller departments. Staff assistance is provided by the Capital Program Section of the Construction Directorate.

One major task of the Capital Budget Committee is programming funds, the continually recurring process of balancing the annual need for capital funds (the demand) with the annual availability of federal capital funds and local bond funds (the supply). In the last several years, the Authority has relied heavily on phasing or staging projects into annual funding increments. The phasing process involves breaking up a program, or project, into annual funding requests. A project is treated as a bundle of construction and engineering contracts, procurements, force accounts and other internal costs, and projections are made as to the date when funds for the contracts, procurements, etc., will be obligated.

A "sequence of obligations" is, thereby, established for each program or project and is divided into federal fiscal year funding increments, based on when the various cost items will actually be committed. The Authority then submits amendatory capital grant applications to UMTA to obtain capital grant funds for projects for which initial funding has been approved in earlier fiscal years, generally for one fiscal year. As each subsequent amendatory capital grant application is submitted, the costs of that project can be estimated more precisely to reflect more detailed engineering, the effects of inflation, and a more accurate projection of contract or procurement award dates.

1.6 TRANSIT PRIORITIES

The MBTA's priority projects are reflected in the Annual Element. Because of uncertainty as to the availability of funding and the

rate of advancement of some projects, the cost of the Annual Element at the beginning of the fiscal year (October 1) exceeds available funding. As the year progresses, the MBTA's Capital Budget process narrows the gap between cost and funding until they become consistent at the end of the federal fiscal year.

There are several reasons for such initial overprogramming: first, it is likely that the schedule for some transit projects will slip, so that not all projects programmed for a particular year may be ready for funding; second, there are often opportunities at the end of a fiscal year to have additional projects funded since UMTA may be able to redistribute funds originally intended for projects in other cities which have suffered unforeseen delays; third, it is possible that Congress or UMTA will program more Section 3 funds for our region than are presently anticipated.

1.7 FUNDING SOURCES, HIGHWAY ELEMENT

Interstate

Projects funded in this category involve new construction on the Interstate System of principal arterial routes in urban and rural areas relevant to long distance and interstate travel. The federal share of the costs is 90 percent, and the state share is 10 percent.

Interstate Resurfacing, Restoration, Rehabilitation and Reconstruction ("4R")

This category funds projects in urban and rural areas for the repair of existing Interstate Systems roadways and bridges. The federal share of costs is 90 percent, and the state share is 10 percent.

Consolidated Primary

This category funds projects in urban and rural areas for new construction or reconstruction of connected main roads on the Federal Aid Primary System that are relevant to statewide, regional and interstate travel. The federal share of costs is 75 percent, and the state share is 25 percent.

Urban Systems, Earmarked

This category funds projects within the Federal Aid Urban Area Boundary, which consists of the U. S. designated Boston urbanized area and adjacent areas agreed to by MDPW and local communities. FHWA allocates funds to the entire area including Boston, according to formula. In addition, MDPW itself creates another earmarked funding category, City of Boston projects only, and assigns 24 percent of the Urbanized Area funds to it. Eligible

facilities include high traffic volume arterial and collector streets. Funds may also be used for non-highway transportation improvements such as bus loading areas and facilities as well as preferential bus lanes. The federal share of costs is 75 percent. The community is most often asked to pay the entire cost of preliminary engineering with its own funds. This demonstrates the community's commitment, insures that the design of the improvement reflects local wishes, and preserves federal funds for right-of-way and construction costs.

Urban Systems, Statewide

This category can also fund projects within the Federal Aid Urban Area Boundary. Unlike the Earmarked program, the Boston Urban Area competes with the other urban areas within the State for these funds. The eligible facilities and the funding split are the same as for Urban Systems, Earmarked projects, or 75 percent federal, 25 percent state, and the community most often pays for preliminary engineering.

Rural Secondary

This category funds projects in rural areas on the major collector routes that provide access to and from Primary roads or centers of population. The federal share of costs is 75 percent, and the state share is 25 percent.

Highway Bridge Replacement/Rehabilitation

This category funds projects in urban or rural areas for the replacement or repair of bridges, based upon structural adequacy and safety, servicability and functions, public use and age. Federal share of costs is 80 percent, and state share is 20 percent.

The federal government divides this funding category into either Off-Systems or On-Systems, depending upon the roadway's eligibility for Federal Aid. A further subdivision of the category is for optional funds, which can be applied to either Off- or On-Systems bridges at the discretion of the MDPW.

Rail-Highway Crossings

This category funds projects in urban and rural areas at locations on the Federal Aid System that have high accident histories or the potential for hazard. Such projects could include signalization, signing, or the removal of roadside obstacles. Federal share is 90 percent of costs, and state share is 10 percent.

I.8 CLASSIFICATION OF HIGHWAY PROJECTS

A highway project is programmed for construction in the Annual Element based on:

- Percent of design work complete by the beginning of the fiscal year.

- Estimated date that the project will be advertised for construction bids.

- An assessment of money available and need for the proposed improvement.

A project must have received Federal Highway Administration approval of its 75-percent design plans and have an estimated advertising date within the current federal fiscal year before it may be considered for inclusion in the Annual Element. Projects which do not meet these two requirements are automatically placed in the 2-5 Year Element. Projects which do meet these requirements may also be placed in the 2-5 Year Element as a result of federal funding limitations, or other problems which are currently delaying the implementation of the project.

This method of classification attempts to present a more realistic picture of construction activity and the expenditure of federal construction funds likely to occur in the current fiscal year. Projects at less than 75-percent design generally are not able to advance to construction within a calendar year. However, if a project does achieve 75-percent design during the course of the fiscal year, it may be forwarded to the Annual Element at the next amendment period, provided that sufficient funding is available.

There are two exceptions to the above classification guideline. One is a project which can advance quickly through design and approval and be ready for advertising during the fiscal year. Examples are traffic signal upgrade projects or resurfacing projects--even major ones. The other exception is a high-priority project whose implementation is desired during the current fiscal year. Assignment to the Annual Element, in this case, assumes a commitment of sufficient resources to complete preliminary engineering and anticipates all necessary federal and local approvals.

I.9 USING THE TIP - GENERAL INFORMATION

The TIP states the projects for which the region expects to request federal funding. As a federal certification document, the TIP is required to contain only certain projects which will require federal money for implementation. Highway projects funded under state programs appear in this document for information only (see IV.5). Their presence is not required by Federal regulations, and no MPO endorsement of these projects is implied. The presence of a particular project in the Annual Element indicates the project's priority, but only in the sense that out of all the projects in the pipeline, it is among those likely to be ready for implementation in the current fiscal year.

The project costs listed are estimates and should not be considered final for several reasons. The federal funding agency may not agree to fund the entire project as it was conceived at the local level. This usually becomes known during the various reviews which occur during project development. Either UMTA or FHWA could determine that a certain project contains elements which rightly fall outside of the intent of the funding program and may deny requests to pay for them, thereby requiring the Commonwealth or the local community to find an alternative source of money or to eliminate such elements entirely.

Actual project costs often exceed the estimate given in the TIP. The true dimensions of a transportation problem and its solution may be larger and, therefore, more costly than originally estimated. Additionally, the use of federal funds requires conformance with certain environmental, design, and procurement standards, which can result in a more costly project than originally conceived. The above reasons for increased project costs become apparent during project development and finally, in the marketplace. The cost of transportation equipment and construction is subject to the same inflation as the rest of the economy. Actual costs ran ahead of estimates during the late 1970's; more recent bids, however, have come in under the estimates, as inflation has moderated.

This document was prepared by the Central Transportation Planning Staff from data provided by the MBTA, the MDPW, and others. It contains the most current information available when the document was produced. Because the status of projects is always changing, amendments to the document during the year provide updates to the information contained herein. Questions concerning the current status of projects or requests for information not contained in the TIP should be directed first to CTPS.

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II. TRANSIT ELEMENT

The transit element of the TIP lists projects under categories that describe the major components of the MBTA's capital program, i.e., efficiency, renovation, replacement and expansion. Non-MBTA capital projects, if any, are included in the most appropriate category.

Each project entry presents an anticipated capital funding schedule. The annual element refers to federal fiscal year 1987; the 2-5 year element refers to fiscal years 1988 through 1991. The future element refers to fiscal years after 1991 and is included because the life span of transit projects often exceeds the five-year period covered by the TIP. The total is the sum of the above elements, and therefore refers only to the portions of the project which have not yet received federal funds. The amount of grants approved for fiscal year 1986 funds is also included for information.

All costs are stated in millions.

The above projects are funded through the major capital programs, Section 3, Section 9, and Interstate Transfer. The transit element also lists other projects and programs:

- Section 9 and Section 18 operating assistance which are non-capital
- Section 16(b)(2), which is a special purpose capital program.
- Handicapped Accessibility, which concisely describes actions which are occuring in a number of areas.

A summary of the transit capital program concludes the transit element.

II.1 EFFICIENCY PROJECTS

1 Signal Improvements/ Communications	Last Yr	Annual	2-5 Yr	Future	Total
	14.8	5.0	48.0	0.0	53.0

Project Description:

This project consists of the renewal or replacement of deteriorated, or substandard, signal equipment on the Red, Blue, Green, and Orange Lines; the installation of communication cable on the Blue and Green Lines; the installation of an emergency telephone system on the Red, Blue, Green and Orange Lines; the completion of an MBTA/Police radio system in the Authority's transit tunnels; and the installation of a computer-aided bus radio system.

Probable Funding: Section 3, 9 and Local Bond funds

FY'87 Activities:

1987 funding would provide for Red Line signal and communication improvements (double running, Pax and cable), final design of a permanent signal and communication system on the Green Line, and Phase II construction relating to Blue Line signal improvements.

2 Systemwide Improvements	Last Yr	Annual	2-5 Yr	Future	Total
	9.4	20.0	60.0	0.0	80.0
State Bond	10.0				

Project Description:

Continuation of the Authority's Plant Improvements Program, which addresses numerous small-scale construction and procurement elements. The major components of the Systemwide Improvements effort are MIS Programs software and equipment, procurement of shop tools and equipment, purchase of non-revenue vehicles, a new computerized telephone system, update security, fire and police communication systems, miscellaneous construction improvements at various Authority facilities, such as the Central Materials Distribution Center and Warehouse and furniture for various Authority directorates.

Probable Funding: Section 9 and Local Bond funds

FY'87 Activities:

Funding in 1986 would realize the continuation of this program. Funding would be provided for planning, engineering and design of Management Information Systems for all the Authority's departments; small construction projects; and, for non-revenue vehicles for Operations, Commuter Rail and Police Directorate.

	Last Yr	Annual	2-5 Yr	Future	Total
3 Park-Ride Improvement Program	1.3	5.0	15.0	2.0	22.0
State Bond	2.4				

Project Description:

The MBTA has initiated a program of systematically increasing the supply of parking spaces at its rapid transit and commuter rail stations. This program is designed to increase ridership, reduce automobile travel and, hence, gasoline consumption. Previously granted funds have been used for land takings and appraisals, for engineering consultant services and for construction. Planning and engineering design has been initiated in sixteen locations. Of these, final construction plans have been advanced for parking improvements at twelve high-priority sites: Route 128 Railroad Station (Dedham), North Quincy Red Line Station, Canton Center, Canton Junction, Beverly Depot, Beverly-Montserrat, North Beverly, Ipswich, Stoughton, Arlington Heights, West Concord, and Wellesley Farms. Construction has been completed at Route 128 Railroad Station, Dedham. Construction has also been completed in Ipswich and the Beverly Stations. It is anticipated that construction will be underway at North Quincy, Canton Center, Stoughton, Arlington Heights, Canton Junction and Franklin in 1986. Final design will continue at about 8-10 other sites.

Probable Funding: Section 3, 9, and State Bond Issue

FY'87 Activities:

FY'87 activities consist of further engineering and design tasks, along with land takings as required. It is anticipated that several other locations will be readied for construction, and that engineering plans will be completed or underway for approximately 15 locations in all during this time frame.

	Last Yr	Annual	2-5 Yr	Future	Total
4 Child Care Center - State Transportation Building	0.2	0.0	0.0	0.0	0.0

This project has been completed with State Bond funds.

	Last Yr	Annual	2-5 Yr	Future	Total
5 Central Materials Distribution Center and Warehouse	0.0	0.0	0.0	0.0	0.0

This project is now included in Systemwide Improvements.

	Last Yr	Annual	2-5 Yr	Future	Total
6 Lechmere Maintenance Facility	0.8	0.5	26.0	0.0	26.5

Project Description:

The Authority would construct a new maintenance facility for Green Line light rail vehicles. Presently, the Green Line facilities are on the westerly portion. A new facility at Lechmere would benefit the Authority's operations by providing maintenance of vehicles at the northern terminus of the Green Line. 1986 funding was for preliminary engineering and design.

Probable Funding: Section 3

FY'87 Activities:

1987 funding would complete all design efforts for the project.

	Last Yr	Annual	2-5 Yr	Future	Total
7 Malden Center Pedestrian Overpass	0.0	2.0	0.0	0.0	2.0
State Bond		1.5			1.5

Project Description:

The Authority, in cooperation with the City of Malden, is designing, and will construct, a pedestrian overpass which will connect the Malden Center Station to the Authority's Rapid Transit Orange Line Malden Center Station. This connection is being designed to accommodate the elderly and handicapped. Funding that is identified through Chapter 811 of the Acts of 1985, along with funding in UMTA approved grant MA-03-0005, will be used for this project.

Probable Funding: Section 3

FY'87 Activities: Construct project

II.2 RENOVATION PROJECTS

8 Track Improvements	Last Yr	Annual	2-5 Yr	Future	Total
	21.5	20.0	30.0	0.0	50.0

Project Description:

The Track Improvements Project consists of a multi-year track rehabilitation program in which all deteriorated and substandard track on the Green Line and the three rapid transit lines will be renewed or replaced. The work includes the removal of old ties, rails and ballast followed by upgrading and the installation of new ballast, ties, rail, spikes and fastening plates.

Track work in FY'85 was undertaken on the Green Line from North Station to Boylston, including Copley, Kenmore and Beacon Junctions. The Red Line work is also underway with work from Harvard to Charles. Both of these efforts are scheduled to be completed in late 1986. The Authority anticipated a federal grant in 1986 for continued Green Line Track work.

Probable Funding: Section 3, 9 and Local Bond funds

FY'87 Activities:

Boylston Station to tunnel portals, at Fenway on the Riverside Line, and St. Mary's Street on the Beacon Line, and for purchase of long lead time material for the Riverside yard. Funds in 1987 would be utilized for construction on the Red Line from the Charles Portal to the portal at Andrew.

	Last Yr	Annual	2-5 Yr	Future	Total
9 Power/Electrification Improvements	42.15	9.7	42.0	0.0	51.7
State Bond	.23				

Project Description:

The Power/Electrification Project is the conversion of the Authority's obsolete 25Hz power system to a 60Hz system connected to a central source of power.

The Authority's Electrification Program, initiated in 1983, is a comprehensive program to improve the Authority's power and electrical systems.

Significant progress has been made with funds received to date with the construction of a 115Kv transformer facility, new substations at South Station and Dewey and the demolition of obsolete substations currently underway.

Future grants will be used primarily to complete the upgrade of the Power Distribution System on the Green, Blue, and Orange Lines as well as "resectionalizing" (reorganizing the cable network between the substations and track) on all lines.

FY'86 funds are being directed at upgrading the Power and Electrification Systems on the Green Line. Additionally, to provide for the removal of PCB transformers.

Probable Funding: Section 3, 9 and Local Bond funds

FY'87 Activities:

In 1987 funding would provide for the additional amount required for the upgrading of the Red and Green Line Power Program; and, the upgrading of the overhead catenary with constant tensioning on the Green and Blue Lines. Also, funding is needed for the continuation of the Power Cable Replacement Program.

	Last Yr	Annual	2-5 Yr	Future	Total
10 Power Cable Replacement	0.0	0.0	0.0	0.0	0.0

This project has been included in Power/Electrification Improvements.

11 Tunnel Rehabilitation	Last Yr	Annual	2-5 Yr	Future	Total
	17.5	2.5	20.0	15.0	37.5

Project Description:

The Tunnel Rehabilitation element is a program for the systematic renovation of the rapid transit tunnels, some sections of which are 60-80 years old. The ventilation program involves the construction of new ventilation shafts and the rehabilitation of existing ventilation fans in other locations. The principal purpose of the tunnel ventilation system is to exhaust smoke from tunnels in the event of a fire in a tunnel so that passengers and employees are protected from smoke inhalation and can be safely evacuated. FY'86 funds are identified for new ventilation shafts and tunnel rehabilitation on the Green Line.

Probable Funding: Section 3, 9 and Local Bond funds

FY'87 Activities:

1987 funding would realize the construction of tunnel repairs on the Orange Line as well as continued ventilation improvements on the Red and Green Lines.

12 MBTA Bridge Program	Last Yr	Annual	2-5 Yr	Future	Total
	0.8	2.5	15.0	20.0	37.5

Project Description:

The Authority has initiated a program of Bridge Inspections and Ratings, including bridges on the Rapid Transit System and the Commuter Rail System. The inspections and ratings have been funded with Section 9 funds, and the program will now identify those bridges which may need extensive repairs, rehabilitation, or replacement.

Probable Funding: Section 9 and Local Bond funds

FY'87 Activities:

Funding in 1987 would continue the bridge inspection and evaluation phase, and provide for initiation of design of repairs as needed.

	Last Yr	Annual	2-5 Yr	Future	Total
13 Station Modernization/ Platform Lengthening	1.5	5.0	0.0	0.0	5.0

Project Description:

The Authority, during the past five years, has initiated a Station Modernization/Platform Lengthening project on the Red Line. Projects completed and underway are Washington, Central, Andrew, Park, Savin Hill, Charles, Kendall, Broadway, and South Station.

Probable Funding: Section 3, 9 and Local Bond funds

FY'87 Activities:

It is anticipated that South Station will require station finishes, yet this amount has been identified under the South Station project. Funds have been identified to undertake additional station modernization work on the Red Line (Broadway Station).

	Last Yr	Annual	2-5 Yr	Future	Total
14 JFK/UMASS Station	16.9	5.0	0.0	0.0	5.0

Project Description:

In support of a redevelopment program at Columbia Point, encompassing the new Kennedy Library and the University of Massachusetts, it is proposed to enlarge JFK/UMASS Station. This program involves the construction of an island-type platform near the existing JFK/UMASS Station on the Dorchester Branch of the Red Line. The new platform would serve riders using the South Shore extension by providing those commuters with a direct access to JFK/UMASS Station and the Columbia Point area. The new station platform and the existing platform will be connected by a new central lobby with access to both platforms via new stairs and elevators for the handicapped. The existing entrance at Columbia Road will be converted to a new entrance/exit only way into the new station. At the southern end of the station, the existing entrance will be changed to exit only. The stairway connecting the UMASS Busway will be eliminated and removed. Also included in the project are: a joint use bus transfer facility with the University of Massachusetts, handicapped accessibility features, and possible construction of a new MBTA Police Station.

Probable Funding: Section 3 and Chapter 811 Bond Money

FY'87 Activities:

Continuation of construction, which begins September 1986. Also initiation of construction of a new MBTA Police Station in the JFK/UMASS Station area in 1987.

	Last Yr	Annual	2-5 Yr	Future	Total
15 Kendall Station	1.0	0.0	0.0	0.0	0.0

Project funding is completed, and construction will continue through 1987.

	Last Yr	Annual	2-5 Yr	Future	Total
16 Commuter Rail Improvement and Development	85.0	90.0	80.0	0.0	170.0

Project Description:

The Authority's Commuter Rail Program continues to provide necessary improvements to commuter rail facilities, bridges, tracks equipment and vehicles.

Probable Funding: Section 3, 9 and bond funds

FY'87 Activities:

- o Track Improvements: 1987 funding would consider high priority track work such as: from North Station to mile one; Fitchburg Line; Main Line Cambridge-Ayer; New Hampshire Line Track Rehabilitation; Boston to Lowell and Stoughton Branch and West Route; (Wellington to Reading).

- o Signal Improvements: 1987 funding would consider signal improvements on the Main Line (Boston to Ayer), the New Hampshire Main Line (Boston to Billerica) and the West Route Main Line (Boston to Andover).

- o Stations Improvements: 1987 funding would continue reconstruction and construction efforts for stations throughout the Commuter Rail System.

- o Layover Facilities: Rockport and Franklin are being undertaken in conjunction with Parking and Station Improvements while Lowell and Bradford layover facilities would be undertaken in 1986 and 1987.

- o Bridges Improvements: 1987 funding will be directed at high priority bridges on the Commuter Rail System needing upgrading.

- o New Vehicles/Locomotives Improvements: 1987 funding will be utilized for the procurement of 45 to 60 high-capacity vehicles and new locomotives.

- o New Franklin Station Project/etc.: Funding allocated for this project would provide for engineering and design and land acquisition in 1986 with construction required in 1987. Funding under this category will also provide for a feasibility analysis of restoring Commuter Rail service from the Authority's Ipswich Terminal, 9.2 miles north to the town of Newburyport.

	Last Yr	Annual	2-5 Yr	Future	Total
17 Commuter Rail Improvement-Maintenance Facilities	27.2	8.0	25.0	0.0	33.0

Project Description:

One element that this project entails is design of a new joint MBTA/Amtrak Light Maintenance Facility. The structure has four tracks running through it. The MBTA and Amtrak portions of the structure are separated by a common wall to reduce construction costs. The MBTA portion contains fueling operations, two train washers, sanders, and the tools and equipment required to operate a facility such as this. The facility's primary function will be to provide light maintenance, brake shoe change, etc. for the South Side Commuter Rail Fleet.

Probable Funding: Section 3, 9 and Local Bond funds.

FY'87 Activities:

With 1987 funding, the Authority would continue construction of a new Service and Inspection facility for its South Side commuter rail service and fleet. The South Side Maintenance Facility is presently under final design and would be undertaken in conjunction with the Federal Railroad Administration. This facility will allow for the servicing and inspection of vehicles and locomotives on the South Side. Presently, service is performed in an open area near South Station. If repairs cannot be made due to equipment and weather, the vehicles have to be transported to the North Side (Boston Engine Terminal).

	Last Yr	Annual	2-5 Yr	Future	Total
18 Boston Engine Terminal Project	0.2	3.8	21.0	25.0	49.8

Project Description:

The MBTA's Boston Engine Terminal Project will rebuild the existing Commuter Rail Heavy Maintenance Facility and Running Repair Shops as well as the Northside system's Service and Inspection Facility.

The existing shops were constructed in the 1930s and 40s. At present they are inefficient facilities for the MBTA's use. The shops' inefficiencies derive from the age of the plant as well as the fact that the facilities were designed primarily for freight operations.

The BET Project will provide a staged rebuilding plan for a newly designed facility. Staged construction is necessary because of funding restrictions and because of the requirement to maintain present operations.

Probable Funding: Section 3, or 9

FY'87 Activities:

The project will take a completed master plan and advance the entire Project to 30% plans. In addition, the Project will identify early action items such as demolition for advancement.

	Last Yr	Annual	2-5 Yr	Future	Total
19 Ashmont/Mattapan/ Orient Heights	0.1	10.0	0.0	0.0	10.0

Project Description:

- o Ashmont (Red Line): The Authority would utilize 1986 and 1987 funding to design and construct a sheltered work area at the Ashmont repair site. Presently, personnel are required to work in an open area without protection from the weather. 1986 funding would provide funds for design.

- o Mattapan (Green Line-High Speed Trolley): The Authority would utilize 1986 and 1987 funding to design and construct a sheltered work area at the Mattapan repair site. Presently, personnel are required to work in an open area without protection from the weather. 1986 funding would provide funds for the purchase and installation of a new shelter for this facility.

- o Orient Heights (Blue Line): The Authority's Orient Heights Carhouse is in need of improvements such as lighting, heating, electrical, and interior modifications. Also, track improvements are necessary which would improve operations. 1986 funding would be utilized for design with construction occurring in 1987.

Probable Funding: Section 3

FY'87 Activities:

1987 funds would allow for construction.

20 Albany Street Garage	Last Yr	Annual	2-5 Yr	Future	Total
	0.0	3.5	0.0	0.0	3.5
State Bond	0.36				

Project Description:

The Albany Street Garage services approximately 100 buses. Presently, the Authority is undertaking repairs to the yard area and upgrading the interior lighting. Funding is needed to make major repairs to this facility including new heating and ventilation, plumbing, electrical systems, improvements to the shop floors and a new roof. 1986 funding would allow for engineering and design.

Probable Funding: Section 3

FY'87 Activities:

1987 monies will be used for construction.

21 Red Line Cars/Silverbirds	Last Yr	Annual	2-5 Yr	Future	Total
	0.0	2.0	20.0	50.0	72.0
State Bond	2.14				

Project Description:

This project involves two elements. The first element is the rehabilitation and modernization of the Authority's 74-car Silverbird fleet, which operates on the Red Line. These cars have been in service for approximately 17 years, and various conditions have progressed to a point which exceeds the Authority's ability to correct within the operating budget. The second element is the purchase of 58 new Red Line vehicles.

Current long-range planning calls for the eventual replacement of the 88 cars purchased in 1962 for the Cambridge-Dorchester line.

Probable Funding: Section 3, 9, 23 and State Bond funds
(Ch. 637, Acts of 1983
Ch. 811, Acts of 1985)

FY'87 Activities:

The Authority in 1984 placed a bid for 58 new Red Line vehicles with UTDA of Canada. These vehicles should be arriving in late 1986 for revenue service. The Authority in 1987 should complete its Silverbird Rebuild Project. This program, funded with local bond funds, is reconstructing these vehicles for improved operations on the Red Line. The Authority anticipates that it will be necessary in the upcoming years to replace its 88 1962 Cambridge-Dorchester cars.

	Last Yr	Annual	2-5 Yr	Future	Total
22 Purchase of Single Level Commuter Coaches	16.7	0.0	0.0	0.0	0.0

Funding is complete. This project is being implemented, with a total of 67 new coaches being built. Additionally, the future procurement of Commuter Rail vehicles and Locomotives is identified under Commuter Rail.

	Last Yr	Annual	2-5 Yr	Future	Total
23 LRV Improvement	72.0	5.0	50.0	0.0	55.0

Project Description:

The program is being financed with funds remaining from UMTA'S original grant for the purchase of the LRVs: the cash settlement reached with the original contractor is invested at the present time, and the proceeds are being used to purchase 50 new SLRVs. Additionally, the Authority is reviewing options for leasing or purchasing an additional 50 SLRVs.

Probable Funding: Investment Account, Lease, Local Bond funds

FY'87 Activities:

The Authority will be accepting the leased vehicles in 1986 with the purchased vehicles to be delivered in 1987.

	Last Yr	Annual	2-5 Yr	Future	Total
24 North Shore Transit Improvements	22.0	30.0	15.0	0.0	45.0

Project Description:

The North Shore Transit Improvements project will upgrade commuter rail and Blue Line facilities located in the North Shore transportation corridor. This project is in line with current federal policy regarding new rail extension while still addressing the overall objectives of the original scope of the NSTIP. The elements of work now consist of station improvements at Salem, Lynn, Wonderland and Revere Beach Stations.

Probable Funding: Section 3, 9, State Bond funds, Ch.637, Ch.811

FY'87 Activities:

The initiation of construction for Wonderland and Revere Beach Stations. Also, the construction of a new Parking Garage and related Commuter Rail improvements in Lynn, in addition to other Commuter Rail Improvements on the North Shore Right of Way.

25 CATA Capital Improvements	Last Yr	Annual	2-5 Yr	Future	Total
	0.04	0.04	0.16	0.0	0.20

Project Description:

The Cape Ann Transportation Authority, the EOTC, and the MBTA have agreed that each year CATA may request up to $30,000.00 in federal Section 9 funds for capital improvement projects. Local matching funds bring the total project value to $37,500.00 yearly. Eligible projects may include planning, acquisition, construction and improvement of facilities, equipment, and capital maintenance items.

Probable Funding: Section 9

FY'87 Activities:

Specific capital improvement activities are uncertain. CATA may acquire additional rolling stock for either fixed route or Elderly and Handicapped service.

II.3 REPLACEMENT PROJECTS

26 West/Northwest Bus Garage	Last Yr	Annual	2-5 Yr	Future	Total
	0.0	0.0	20.0	0.0	20.0

Project Description:

Construction of a new garage to house approximately 200 buses serving the west/northwest section of the region. This would permit the closing of the smaller, less efficient facilities now used. This project is not under active consideration at the present time, but may be advanced later.

Probable Funding: Section 3

FY'87 Activities:

None.

27 Arborway Garage	Last Yr	Annual	2-5 Yr	Future	Total
	0.0	0.0	27.0	0.0	27.0

Project Description:

Construction, at the site of the present Arborway bus garage and streetcar carhouse, of a new bus-repair building with operator and maintenance crew lobbies. Approximately 200 to 250 buses would be housed, including some reassigned from other garages as well as those currently assigned to Arborway. Increased inside storage would improve the condition and reduce the maintenance and operating cost of the fleet. This project is not under active consideration at the present time, but may be advanced later.

Probable Funding: Section 3

FY'87 Activities:

None.

	Last Yr	Annual	2-5 Yr	Future	Total
28 Lechmere Station	5.2	30.0	20.0	0.0	50.0

Project Description:

As part of the Green Line Northwest Corridor Project, Lechmere Station is to be relocated to the north side of McGrath O'Brien Highway between East and Water streets. The relocated station will have an LRV storage area, busway, commuter parking, traction power substation, operators lobby, and have the ability to generate trips from Lechmere. The new station will have the ability to accommodate an extension of the Green Line and the construction of a maintenance facility, both of which will be undertaken under separate projects.

Probable Funding: Section 3, 9, and Local Bond funds

FY'87 Activities:

The funds received during FY'86 will be sufficient to complete Phase III, final design and necessary land acquisition. It is anticipated that 1987 funds will be utilized for construction of a new Lechmere Station.

	Last Yr	Annual	2-5 Yr	Future	Total
29 Roxbury Replacement Service	0.6	20.0	35.0	0.0	55.0

Project Description:

With the completion of the relocated Orange Line through the Southwest Corridor, the existing elevated structure will be removed, under current plans. With this in mind, the MBTA is currently conducting a study of alternative methods of improving the transit service in the South End, Roxbury, North Dorchester, and Mattapan. Among the solutions being examined are buses in mixed traffic, trackless trolleys and light rail to serve the radial travel pattern of these areas, and buses in mixed traffic for circumferential service.

Probable Funding: Section 3, 9, 23 and Local Bond funds

FY'87 Activities:

Plans for replacement of the Orange Line through the Southwest Corridor call for the removal of the existing Orange Line elevated along Washington Street in Boston's South End. A number of alternatives are being examined such as light rail and bus for the upper Washington Street/Dudley/Grove Hall area, perhaps extending to Mattapan.

The Authority has identified funding for 1986 and 1987 for engineering and design and Phase I construction which may be undertaken in the Chinatown section (northern section). This funding could also be used for any of the other alternatives chosen for this project. 1986 funding is being allocated for completion of the environmental and alternative analysis work and 1987 funding would be for additional elements to realize the success of this project.

FY 87 TIP Transit Element
Replacement Projects

	Last Yr	Annual	2-5 Yr	Future	Total
30 Rehabilitation of Old Buses and Purchase of New Buses	0.0	20.0	68.0	80.0	168.0
State Bond	32.3				

Project Description:

Purchasing new buses is a continuous program of the Authority, which proceeds at an annual rate designed to gradually reduce the average age of the total bus fleet and to rehabilitate its existing fleet to better serve the riding public. The Authority plans to purchase a number of new buses each year. The requirements for the purchase of additional or replacement lift-equipped vans for The RIDE, the Authority's special mobility service, are also carried under this program.

Probable Funding: Section 3, 9, and Local Bond funds

FY'87 Activities:

Funding identified in 1986 provides for the procurement of 180 new advanced-design buses which will continue to be placed in revenue service during 1987. Also funding is identified to rehabilitate additional old buses. The Authority anticipates that it will be replacing approximately 100 buses per year in the upcoming years.

	Last Yr	Annual	2-5 Yr	Future	Total
31 North Station Transportation Improvements Project	1.2	5.0	35.0	90.0	130.0

Project Description:

The Authority is participating with the Boston Redevelopment Authority and other state and federal agencies and private developers in planning the redevelopment of the North Station area.

As part of this effort the Authority initiated a contract to design transportation improvements in the North Station area. The contract covers the design engineering services necessary for a study of various alternatives and the development of contract documents for the relocation of the Green Line between Haymarket Square and Science Park Station. Also included is the development of a Green Line station, a Commuter Rail Terminal, track and signal reconstruction of three commuter rail main lines, Draw 1 and 2 reconstruction and the relocation of Towers A, H and X.

Probable Funding: Section 3, 9, and Local Bond funds

FY'87 Activities:

1987 funding would allow the completion of all engineering and design, thus allowing for construction in subsequent years.

	Last Yr	Annual	2-5 Yr	Future	Total
32 Rolling Stock Replacement Parts	5.0	5.0	40.0	50.0	95.0

Project Description:

This program commenced in 1983 and provides funding for the procurement of major component parts. This program was initiated through the Surface Transportation Act of 1983 (Gas tax) which allowed for the procurement of major component parts for bus and rail vehicles with federal funding. These component parts must cost at least one percent of the present day cost of a new vehicle and extend the vehicle life and reliability of the Authority's buses and rail cars.

Probable Funding: Section 9 or Local Bond funds

FY'87 Activities:

Continue purchase of rolling stock equipment replacement parts in accordance with UMTA regulations.

	Last Yr	Annual	2-5 Yr	Future	Total
33 Fort Point Channel Bridge Replacement	1.0	1.0	12.0	0.0	13.0

Project Description:

This project would replace the present bridge on the south side located directly outside of South Station in the Fort Point Channel area. A consultant is presently evaluating the existing structure and cost associated with the repair/replacement of this bridge.

Probable Funding: Section 3, 9 and State Bond funds

FY'87 Activities:

Complete final design of the bridge; start construction. Estimated schedule is 2 years.

II.4 EXPANSION PROJECTS

34 Wellington Station	Last Yr	Annual	2-5 Yr	Future	Total
	0.0	0.0	36.5	0.0	36.5

Project Description:

In support of a redevelopment plan for the Wellington Station area, it is proposed to construct a 2,300-car parking garage on air rights over the MBTA maintenance area.

Probable Funding: Section 3

FY'87 Activities:

None.

35 South Station Transportation Center	Last Yr	Annual	2-5 Yr	Future	Total
	15.0	85.0	20.0	0.0	105.0

Project Description:

The South Station project is an extensive reconstruction and expansion of the existing South Station to an intermodal terminal providing inter/intra city rail and bus facilities, as well as a new Red Line Station. The Authority is presently underway with Phase I which includes approximately $50 million of MBTA and federal funding (UMTA/FRA) to reconstruct the existing headhouse, track area and provide foundation support for a new bus terminal. In 1986, the Authority proceeded with the platform lengthening and handicapped access for the South Station Red Line Station.

Probable Funding: Section 3, 9 and Local Bond funds

FY'87 Activities:

Funding in 1986 and 1987 would provide for station finishes (lighting, benches, amenities, etc.) to the South Station Red Line, as well as Phase II which undertakes the construction of a new bus terminal. Phase II includes bus ramps, support columns, ventilation systems for rail yard, bus deck, bus terminal improvements and a connection to the headhouse.

36 Acquisition of Additional Red Line Cars	Last Yr	Annual	2-5 Yr	Future	Total
	5.0	0.0	0.0	0.0	0.0

This project is included in Red Line Cars/Silverbirds.

37 Commuter Boat(s)	Last Yr	Annual	2-5 Yr	Future	Total
	0.0	0.0	1.6	0.0	1.6

Project Description:

To procure commuter boats in the event of a policy change favoring Commonwealth ownership of equipment (vessels) rather than current subsidization of private operations.

Probable Funding: Section 3

FY'87 Activities:

Since March 1984, the MBTA has contracted with private boat companies for operation of commuter boat service between Hingham and Boston. Operating funds have come from the MDPW to provide this alternative mode of transportation during the Southeast Expressway reconstruction. Future funding sources are being investigated. Current state policy calls for subsidization of private vessels to provide service.

Ridership on the three vessels now in service increased 63% since March 1984.

	Last Yr	Annual	2-5 Yr	Future	Total
38 Oak Grove North	0.0	0.0	0.0	125.0	125.0

Project Description:

Extension of the Orange Line from Oak Grove to Route 128. Existing rail and bus service will provide satisfactory service levels for near-term needs. The Orange Line extension, however, would provide substantial user time savings and passenger capacity and is retained as a long-range option. The extension would follow the Reading Branch railroad right-of-way and have five high-platform stations, at approximately the same locations as the present commuter rail stations, and a terminus at Route 128. The line could be built at the present railroad grade, with at-grade crossing of all streets; could be entirely grade-separated; or could be grade-separated at intersections with major streets, and cross minor streets at-grade.

Probable Funding: Section 3

FY'87 Activities:

None

	Last Yr	Annual	2-5 Yr	Future	Total
39 Red Line Northwest Extension (Harvard-Alewife)	14.45	2.0	3.0	0.0	5.0
State Bond	3.50				

Project Description:

Extension of the Red Line from Harvard to Alewife Brook Parkway, provides service to neighborhoods in North Cambridge, Somerville, and Arlington and to more distant communities through the provisions of parking and bus access. The extension used Red Line technology from the new Harvard Square Station. A tunnel was bored north to new stations at Porter Square (where transfer from commuter and bus service takes place) and Davis Square (where transfer from bus routes is made possible). The extension, now complete and operational, used cut-and-cover construction, to Alewife Brook Parkway, where a large parking garage and bus transfer facility are also operational.

Probable Funding: Section 23 and Local Bond funds

FY'87 Activities:

Current funding is being used for the construction of the access road, now 70% complete. This project will be 100% complete September 1986. 1986 funding will be used to pay for contract close-out items such as claims, change orders, and overruns. It may be necessary to allocate funds for claims and close-outs based upon court decisions and settlements.

	Last Yr	Annual	2-5 Yr	Future	Total
40 Red Line Northwest Extension (Alewife-Rt. 128)	0.0	0.0	0.0	435.0	435.0

Project Description:

This project consists of the extension of the Red Line from Alewife Station to Route 128 in Lexington via the Lexington Branch railroad right-of-way. Stations are proposed for Arlington Center, Arlington Heights, Lexington Center and Route 128. Due to funding limitations and state legislation, this project has been deferred.

Probable Funding: Section 3

FY'87 Activities:

None

	Last Yr	Annual	2-5 Yr	Future	Total
41 Beyond Lechmere	0.4	2.0	0.0	75.0	77.0

Project Description:

Extension of the Green Line from its present terminal at Lechmere through Somerville to a point near Tufts University in Medford. Lechmere Station would be relocated to the east of McGrath Highway with the Green Line continuing north along the New Hampshire Division railroad right-of-way to Ball Square, Somerville and beyond to Tufts University, Medford. The entire route is free of grade crossings. Alternative terminal locations are Ball Square and Washington Street. The relocation of Lechmere Station and associated costs are being carried as a project distinct from the extension.

Probable Funding: Section 3, 9 and Local Bond funds

FY'87 Activities:

This project would extend the Authority's Green Line from Lechmere to the Tufts University area. This extension is approximately three (3) miles. The Authority has completed a feasibility analysis and will shortly be undertaking a Draft Environmental Impact Statement and Alternative Analysis.

1986 funding would allow for schematic design and continuation of the alternative analysis. 1987 funding would provide for preliminary engineering and design.

	Last Yr	Annual	2-5 Yr	Future	Total
42 Green Line Extension to Brighton	0.0	0.0	0.0	9.0	9.0

Project Description:

Restoration of the light-rail service, as far as the Oak Square loop in Brighton, that was suspended in 1969 and replaced with bus service to Kenmore Square. Service, which then extended to Watertown Square, was suspended chiefly because of shortage of equipment.

The new Green Line vehicles along with the LRV's and rehabilitated PCC cars may make it feasible to restore this service, which would use the existing Green Line reservation between Packard's Corner and Kenmore Square and the existing tunnel between Kenmore Square and Park Street. In order to allow the service to operate efficiently, the tracks would be rebuilt in a mid-street reservation along Brighton Avenue between Packard's Corner and Union Square; beyond Union Square, existing tracks in the street would be used.

Probable Funding: Section 3

FY'87 Activities:

A preliminary feasibility study is being undertaken by CTPS.

43 Southwest Corridor Project	Last Yr	Annual	2-5 Yr	Future	Total
	0.0	20.0	10.0	0.0	30.0

Project Description:

The Southwest Corridor Project consists of a 4.7 mile relocation of the Orange Line from a point 2,500 feet east of Back Bay Station to Forest Hills Station in Jamaica Plain. Major construction includes: eight new transit stations; provisions for MBTA and Amtrack railroad tracks along with new transit tracks; and, construction/reconstruction of bridges and rights-of-way.

Probable Funding: Interstate Transfer

FY'87 Activities:

Funding will be needed in 1987 for final construction costs, land development, force account, field inspection, and project administration.

44 Needham Branch Restoration	Last Yr	Annual	2-5 Yr	Future	Total
	7.1	0.0	0.0	0.0	0.0

Project Description:

Commuter Rail service along MBTA's Forest Hills to Needham Corridor will be restored during 1987. The entire right-of-way from Forest Hills to Needham Heights will be rebuilt including new ballast, ties and continuous welded rail. A new signal and communication system will be installed and an electric layover facility will be constructed in Needham. Three passing track sections are included in the project that will enable the Authority to maintain a level of service similar to what was in place prior to the termination of service in 1979. The project also includes the purchase of 3 new locomotives and 18 new coaches.

Probable Funding: Interstate Transfer

FY'87 Activities:

Construction for all elements of the project will be ongoing and nearing completion in the winter of 1986-1987.

45 Bowdoin-Charles Connector	Last Yr	Annual	2-5 Yr	Future	Total
	0.35	5.0	15.0	135.0	155.0
State Bond	1.65				

Project Description:

The Blue and Red Lines are the only rapid transit lines in the system that do not intersect. Trips using both of these lines require two transfers. This project is a long-range proposal to remedy that deficiency through provision of a connection between the Red and Blue Lines. A connection from Bowdoin Station on the Blue Line to Charles Street on the Red Line is one option that has been considered. A new Blue Line station would be located at Charles Street Circle below street level, with an escalator connection to the Charles Street Red Line station.

Probable Funding: Section 3, 9 and Bond

FY'87 Activities:

Final engineering and contract documents funding would be necessary in 1987.

46 Brookline Village Connector	Last Yr	Annual	2-5 Yr	Future	Total
	0.0	0.0	0.0	15.0	15.0

Project Description:

This project proposes construction of a short piece of new track from the Brookline Village Station on the Riverside Branch of the Green Line to Huntington Avenue, to join with the tracks of the Arborway Branch of the Green Line. This project would provide service from Brookline Village (as a Green Line Branch) to Huntington Avenue and into Park Street. New building construction in the Brookline Village area makes construction of this connection difficult. Further study will be necessary to determine the feasibility of such a connection.

Probable Funding: Section 3

FY'87 Activities:

None

	Last Yr	Annual	2-5 Yr	Future	Total
47 North Station-South Station Connector	0.0	0.0	0.0	100.0	100.0

Project Description:

Construction of a transit link between North and South Station has been proposed in conjunction with the depression of the Central Artery. The new tunnel would run parallel to the depressed Artery and would include underground platforms at North Station, at State Street near the financial district, and at South Station. As of this date, the Federal Highway Administration has approved funding only to replace the decks of the Central Artery. Thus, this project would become viable given a change in federal policy. Further studies may be available as the design of the Central Artery depression is advanced.

Probable Funding: Section 3

FY'87 Activities:

None

	Last Yr	Annual	2-5 Yr	Future	Total
48 Circumferential Transit	0.0	0.5	125.0	0.0	125.5

Project Description:

Construction of facilities to provide transit service in a circumferential corridor connecting the Sullivan Square area of Charlestown, East Cambridge, MIT, Boston University, the Northeastern University area and the proposed Roxbury replacement service at Huntington Avenue.

Probable Funding: Section 3

FY'87 Activities:

Feasibility study to determine characteristics of circumferential transit service including: identification of potential corridors, estimates of ridership demand; evaluation of possible service modes; estimate of capital and operating costs; and right of way issues. Preparation of report with recommendations for further evaluations.

	Last Yr	Annual	2-5 Yr	Future	Total
49 Blue Line to Lynn	0.0	0.0	0.0	230.0	230.0

Project Description:

Extension of the Blue Line from Wonderland Station in Revere to Central Square in Lynn has been deferred as a result of limitations in Federal funding. The Blue Line tracks would be extended from Wonderland to join the Eastern Route railroad right-of-way south of the Pines River. New rapid transit stations would be located in West Lynn and Central Square.

Probable Funding: Section 3

FY'87 Activities:

None.

	Last Yr	Annual	2-5 Yr	Future	Total
50 Old Colony Railroad Rehabilitation	0.0	5.0	200.0	0.0	205.0
State Bond	5.4				

Project Description:

This project consists of restoration of commuter rail service between Boston and Middleboro, Plymouth and Scituate in the Southeastern area of Massachusetts. The service will use the MBTA and state-owned rights of way except for that portion of the Greenbush Line that runs through Cohasset and Scituate. There the land is owned by those towns. Each branch of the proposed service will have six or seven stations. Parking facilities are expected to range from 100 to 400 spaces at stations where it is appropriate. New construction is expected to involve two railroad crossunders, a railroad bridge over the Neponset River, layover facilities, passing tracks and maintenance facilities. Additionally, the purchase of rail equipment for the service is part of the program.

Probable Funding: State Bond, Section 9, and UMTA Grants

FY'87 Activities:

Alternatives Analysis, Environmental Impact Statement and Environmental Impact Report

II.5 OTHER PROJECTS AND PROGRAMS

	Last Yr	Annual	2-5 Yr	Future	Total
51 Operating Assistance to MBTA and CATA	20.5	20.5	82.2	NA	102.7

Project Description:

The Surface Transportation Act of 1982 provides the option of using Section 9 Block Grant funds for operating, as well as, capital assistance. The MBTA and CATA will share block grant funds for operating assistance as follows:

CATA 45,000
MBTA 20,500,000

The 2-5 year cost shown assumes continued funding at the FY'86 level.

	Last Yr	Annual	2-5 Yr	Future	Total
52 Elderly Handicapped Vans for Non-Profit Agencies	0.4	0.4	NA	NA	NA

Project Description:

Federal grants to non-profit agencies for the purchase of vehicles for transporting elderly and handicapped persons are awarded in annual 'rounds'. A round begins when the amount of the federal apportionment to the state is known. This is usually at the beginning of the calendar year, i.e. approximately one quarter into the federal fiscal year. The state then requests grant proposals which are submitted by the end of May. Grant awards are announced in June, and the vehicles themselves are delivered during the next spring and summer.

Federal Fiscal Year 1987 Funding (12th round):

The total federal apportionment to the state should be known by January 1986. Vehicles will be delivered during the spring and summer of 1987.

	Last Yr	Annual	2-5 Yr	Future	Total
53 Handicapped Accessibility Program	1.0	4.0	21.2	NA	25.2

Project Description:

The MBTA is continuing a multi modal effort to provide mobility for persons with special needs. The modes are:

Rapid Transit: All new and refurbished stations will be accessible to handicapped persons. Low cost Capital Improvements will be made at some existing stations where narrow pass gates are present.

Commuter Rail: Reconstruction of North, South and Back Bay Stations will include high platform access to trains. Mini-high platforms will be constructed at other stations.

Fixed Route Buses: There are currently 184 lift-equipped buses. An additional 90 have been placed on order and should be arriving during FY'87.

Paratransit: THE RIDE currently serves Boston and 13 adjacent communities. Service area: Boston (all), Watertown, Somerville, Revere, Winthrop, Brookline, Arlington, Malden, Chelsea, Cambridge, Newton, Belmont, Medford and Everett.

On May 12, 1986, the RIDE began a six-month demonstration project with SHARE-A-RIDE of Lexington. Service area: Bedford, Burlington, Concord, Lexington, Lincoln, Winchester, Wilmington and Woburn.

At the end of the trial period the MBTA will assess the continuation of SHARE-A-RIDE service as well as the possibility of expansion into other areas.

The proposed FY'87 budget for THE RIDE is $4.0 million and FY'88 is estimated to be $5.0 million.

Probable Funding: Section 20

FY'87 Activities:

Add additional lift vehicles to the fleet. Additional communities will be added to expand THE RIDE service area. Reconstruction of stations to include access to trains. The RIDE program is funded out of Bus monies also.

FY 87 TIP Transit Element
Other Projects and Programs

	Last Yr	Annual	2-5 Yr	Future	Total
54 Section 18 Transit Assistance - CATA	0.0	0.03	NA	NA	NA

Project Description:

CATA will receive approximately $30,000 in Section 18 assistance for FY'87. Of this amount, $4,500 will be utilized for CATA administrative expenses and the remaining $25,500 will be utilized for the provision of demand-responsive service for the general public in the towns of Essex, Ipswich and Topsfield. Far-Fetched Transportation, Inc. operates this service under contract to CATA.

II.6 Transit Capital Program Summary

		Annual	2-5 Yr	Future	Total
Efficiency Projects					
1	Signal Improvements/Comm... (3)	5.00	48.00	0.00	53.00
2	Systemwide Improvements ... (9)	20.00	60.00	0.00	80.00
3	Park-Ride Improvement Pgm . (3)	5.00	15.00	2.00	22.00
4	Child Care Center-Tran. Bld (S)	0.00	0.00	0.00	0.00
5	Central Material Dist. Cent (9)	0.00	0.00	0.00	0.00
6	Lechemere Maint. Facility . (3)	0.50	26.00	0.00	26.50
7	Malden Pedestrian Overpass. (3)	2.00	0.00	0.00	2.00
Renovation Projects					
8	Track Improvements ..... (3)	20.00	30.00	0.00	50.00
9	Power/Elect. Improvements.. (3)	9.70	42.00	0.00	51.70
10	Power Cable Replacement ... (3)	0.00	0.00	0.00	0.00
11	Tunnel Rehabilitation ..... (3)	2.50	20.00	15.00	37.50
12	MBTA Bridge Program ..... (9)	2.50	15.00	20.00	37.50
13	Station Modernization ..... (3)	5.00	0.00	0.00	5.00
14	JFK/U MASS Station ..... (3)	5.00	0.00	0.00	5.00
15	Kendall Station ..... (3)	0.00	0.00	0.00	0.00
16	Commuter Rail Imp. & Dev... (3)	90.00	80.00	0.00	170.00
17	Commuter Rail Maint. Facil. (3)	8.00	25.00	0.00	33.00
18	Boston Engine Terminal .... (3)	3.80	21.00	25.00	49.80
19	Ashmont/Mattapan/Orient Hts (3)	10.00	0.00	0.00	10.00
20	Albany Street Garage ..... (3)	3.50	0.00	0.00	3.50
21	Red Line Cars/Silverbirds . (3)	2.00	20.00	50.00	72.00
22	Purchase Commuter Coaches.. (3)	0.00	0.00	0.00	0.00
23	LRV Improvement ..... (V)	5.00	50.00	0.00	55.00
24	North Shore Transit Imp.... (3)	30.00	15.00	0.00	45.00
25	CATA Capital Improvements.. (9)	0.04	0.16	0.00	0.20
Replacement Projects					
26	West/Northwest Bus Garage . (3)	0.00	20.00	0.00	20.00
27	Arborway Garage ..... (3)	0.00	27.00	0.00	27.00
28	Lechmere Station ..... (3)	30.00	20.00	0.00	50.00
29	Roxbury Replacement Service (3)	20.00	35.00	0.00	55.00
30	Rehab/Purchase Buses ..... (3)	20.00	68.00	80.00	168.00
31	North Station Transp. Imp.. (3)	5.00	35.00	90.00	130.00
32	Rolling Stock Repl. Parts . (9)	5.00	40.00	50.00	95.00
33	Fort Point Channel Bridge . (3)	1.00	12.00	0.00	13.00

FY 87 TIP Transit Element
Transit Capital Program Summary

		Annual	2-5 Yr	Future	Total
Expansion Projects					
34	Wellington Station ..... (3)	0.00	36.50	0.00	36.50
35	South Station Transp. Cent. (3)	85.00	20.00	0.00	105.00
36	Acquire Red Line Cars ..... (3)	0.00	0.00	0.00	0.00
37	Commuter Boat(s)..... (3)	0.00	1.60	0.00	1.60
38	Oak Grove North ..... (3)	0.00	0.00	125.00	125.00
39	Red Line Harvard - Alewife (I)	2.00	3.00	0.00	5.00
40	Red Line Alewife - Rt 128. (3)	0.00	0.00	435.00	435.00
41	Beyond Lechemere ..... (3)	2.00	0.00	75.00	77.00
42	Green Line Ext. To Brighton (3)	0.00	0.00	9.00	9.00
43	Southwest Corridor Project. (I)	20.00	10.00	0.00	30.00
44	Needham Branch Restoration. (I)	0.00	0.00	0.00	0.00
45	Bowdoin - Charles Connector (3)	5.00	15.00	135.00	155.00
46	Brookline Village Connector (3)	0.00	0.00	15.00	15.00
47	N. Sta. - S. Sta. Connector (3)	0.00	0.00	100.00	100.00
48	Circumferential Transit ... (3)	0.50	125.00	0.00	125.50
49	Blue Line to Lynn ..... (3)	0.00	0.00	230.00	230.00
50	Old Colony RR Rehab..... (9)	5.00	200.00	0.00	205.00
Federal funds required, by funding category:					
	Section 3	296.40	605.68	1108.80	2010.88
	Section 9	26.03	252.13	56.00	334.16
	Section 23	18.70	11.05	0.00	29.75
	Investment Account	0.00	0.00	0.00	0.00
	State Bond Funds	0.00	0.00	0.00	0.00
	All sources	341.13	868.86	1164.80	2374.79
Local funds required, by funding category:					
	Section 3	74.10	151.42	277.20	502.72
	Section 9	6.51	63.03	14.00	83.54
	Section 23	3.30	1.95	0.00	5.25
	Investment Account	5.00	50.00	0.00	55.00
	State Bond Funds	0.00	0.00	0.00	0.00
	All sources	88.91	266.40	291.20	646.51
Total project costs, by funding category:					
	Section 3	370.50	757.10	1386.00	2513.60
	Section 9	32.54	315.16	70.00	417.70
	Section 23	22.00	13.00	0.00	35.00
	Investment Account	5.00	50.00	0.00	55.00
	State Bond Funds	0.00	0.00	0.00	0.00
	All sources	430.04	1135.26	1456.00	3021.30

FY86 TIP TRANSIT ELEMENT
Transit Capital Program Summary

OTHER PROJECTS & PROGRAMS		Annual	2-5 Year	Future	Total
51	Operating Assistance to MBTA and CATA	20.5	82.2	NA	102.7+
52	Elderly Handicapped Vans for Non-Profit Agencies	0.4	NA	NA	NA
53	Handicapped Accessibility Program	4.0	21.2	NA	25.2+
54	Section 18 Transit Assistance	0.03	NA	NA	NA

NOTES

- All figures are in millions of dollars.
- Project budgets are the best estimates available at the time of TIP preparation and may be revised to reflect more recent cost estimates before an application is submitted.
- This table includes only the portions of the projects which have not yet received Federal funding.
- Undetermined or not applicable costs have been treated as zero.
- When transit capital grants are made using Section 3, and Section 9 the Federal Share is 80%. The Federal Share for Interstate Transfer funds is 85% as provided under the Surface Transportation Act of 1978.
- The MPO retains the flexibility to determine which funding source or sources will be used for any individual project. The actual federal funding sources for individual projects will depend upon various factors at the time of grant approvial, i.e., project need versus available federal funding.

III. HIGHWAY ELEMENT

The highway element of the TIP lists projects by federal funding category. Within funding categories, projects are listed alphabetically by the community mentioned in the project name. This is true even if the community is not within the MAPC region.

Each project entry presents the project name and identifying number used by the MDPW's Capital Expenditure and Program Office; indicates, as "% Design" and "Design Resp", how close the construction plans are to completion and whether the state or the local community is developing them; and briefly describes the type of work and the project itself.

The estimated cost of up to three work items -- preliminary engineering, right-of-way acquisition, construction -- may be programmed in both annual and 2-5 year elements. These costs are expressed in thousands throughout the highway element. A zero-cost construction work item does not indicate that the project will not be funded during the 5-year scope of this TIP. Instead, this typically indicates that the nature and scale of the project's improvements have not been defined, hence its cost cannot be reliably estimated.

However, projects may be present in the 2-5 year element even though they are not expected to be funded during that period. The region has established this convention to allow the TIP to present the complete highway program by including projects which are beyond the formally-defined scope of the document.

If the project involves work in more than a single city or town, a list of up to nine additional communities appears in the project entry. This list will be representative rather than exhaustive if the project is very extensive.

A summary of the capital program concludes the highway element.

Section IV.4 contains an index of federal-aid projects by community. Reviewers are advised to use the index to locate all projects of interest in their own, or nearby, communities.

Section IV.5 contains a list of state-funded projects. Although these are presented in a format similar to the federally-funded projects, no endorsement or approval of these projects through the TIP is implied or should be assumed.

III.1 INTERSTATE

BOSTON	CENT ARTERY CENT, 01	011700	Annual	2-5
%Design:	0	PE	30000	
Design Resp:	State	ROW	10000	
Work Type:	Reconstruction	CON		1300000
Description:	Depression of Central Artery from Charles River to Congress St. (Dewey Sq. tunnel)			

BOSTON	CENT.ARTERY NORTH, 02	011802	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	190	
Description:	Demolition of buildings, Section 2 (Y. M. C. A. etc.)			

BOSTON	CENT.ARTERY NORTH, 03	011803	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	14100	
Description:	Viaducts Section 1 (ramp TN, LN, CL, etc.)			

BOSTON	CENT.ARTERY NORTH, 04	011804	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	11650	
Description:	Temporary detour structure, etc., Section 2			

BOSTON	CENT.ARTERY NORTH, 05	011805	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	46300	
Description:	Looped viaducts, Section 1			

BOSTON	CENT.ARTERY NORTH, 06	011806	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	93630	
Description:	Tunnels, N. Washington St. bridge, streets, etc., Section 2			

BOSTON	CENT.ARTERY NORTH, 07	011807	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	6950	
Description:	Tobin Bridge approach viaduct, Section 2			

BOSTON		THIRD HARBOR TUNNEL, 01	133905	Annual	2-5
%Design:	0		PE		
Design Resp:	State		ROW		
Work Type:	Construction		CON		1410065
Description:	Feasibilty study of a third harbor tunnel				

Summary of INTERSTATE

8 projects

Items:

	ANN.	2-5	TOT
PE	1	0	1
ROW	1	0	1
CON	6	2	8
Total	8	2	10

Costs:

	ANNUAL	2-5	TOTAL
PE	30000	0	30000
ROW	10000	0	10000
CON	172820	2710065	2882885
Total	212820	2710065	2922885

III.2 INTERSTATE RESURFACING (4R)

BOSTON	DEWEY SQ TUNNEL, 01	019600	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: No data		CON	10000	

Description: Rehabilitation of Dewey Sq. tunnel, walls, lighting, roadway, etc.

BOSTON	DORCHESTER AVE,BOSTON,04	020703	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON	800	

Description: Bridge deck replacement, B-16-256, Dorchester Ave. over S. E. Expressway

BOSTON	SAVIN HILL, BOSTON, 01	127520	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON	800	

Description: Bridge deck replacement, B-16-261, Savin Hill Ave. over S. E. Expressway

CANTON	RT 128, CANTON, 02	086920	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Reconstruction		CON		35000

Description: Upgrading Rt. I-95 (Rt-128) from I-95 Canton to Rt-9, additional lane

Work Also In: WELLESLEY DEDHAM NEEDHAM WESTWOOD

FRANKLIN	RT I495, FRANKLIN, 04	066511	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: Resurfacing		CON	1700	

Description: Resurface Rt. I-495, Foxborough Station 92 + 23.80 to Station 201 + 00 Milford

Work Also In: PLAINVILLE WRENTHAM FOXBOROUGH BELLINGHAM MEDWAY MILFORD

MARLBOROUGH	RT I290, MARLBOROUGH, 02	063601	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON	100	

Description: Improvements to ramp 'H', northbound from I-290 to Rt-I-495

MEDFORD	RT I93, MEDFORD, 01	071500	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Construction	CON	22000	
Description:	I-93 ramps at Mystic Valley Parkway (Rt. 16), provide 2 missing ramps			

MEDFORD	RT-I-93, MEDFORD, 05	071707	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Resurfacing	CON		3000
Description:	Resurfacing of Rt-I-93 in Somerville and Medford			
Work Also In:	SOMERVILLE			

QUINCY	BATES AVE, QUINCY, 01	003967	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON	500	
Description:	Bridge deck replacement, Q-1-40, Bates over Rt. I-93			

QUINCY	FURNANCE BRK, QUINCY, 01	027550	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON	500	
Description:	Bridge deck replacement, Q-1-43, Furnace Brook Parkway over I-93			

RANDOLPH	RT 128, RANDOLPH, 01	087800	Annual	2-5
%Design:	40	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON		15000
Description:	Addition of lane on Rt-128 (I-93) from Rt-24 north to I-95 in Canton			
Work Also In:	MILTON QUINCY CANTON			

READING	I-93, READING, 03	071802	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Bridge construction	CON	2551	
Description:	Rehabilitate bridge R-3-10, I-93 over West St., bridge R-3-11, I-93 over Rt. 128 / I-95			

WESTON	RT 128, WESTON, 01	088900	Annual	2-5
%Design:	40	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON		10400
Description:	Safety upgrading from Rt-9 to western terminus of Task 'A', Peabody			
Work Also In:	WALTHAM LEXINGTON BURLINGTON			

WILMINGTON	RT 129, WILMINGTON, 01	089200	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Construction	CON	8000	
Description:	Additional ramps I-93 / Rt-129, bridge reconstruction, widen Rt-129 to AVCO plant			
Work Also In:	READING			

WOBURN	RT I93, WOBURN, 01	072310	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON		9000
Description:	Recommendations to reconstruct River Road and Woburn Industrial Park (I-93 / Rt. 128) (CPS)			

Summary of INTERSTATE RESURFACING (4R)

15 projects

Items:

	ANN.	2-5	TOT
PE	0	0	0
ROW	0	0	0
CON	10	5	15
Total	10	5	15

Costs:

	ANNUAL	2-5	TOTAL
PE	0	0	0
ROW	0	0	0
CON	46951	72400	119351
Total	46951	72400	119351

III.3 CONSOLIDATED PRIMARY

ACTON	RT 2, ACTON, 02	095900	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON		30000
Description:	Safety improvements from Rt-111 (Acton) easterly to Crosby's Corner (Concord)			
Work Also In:	CONCORD			

CONCORD	RT-2, CONCORD, 03	096904	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Resurfacing	CON	1000	
Description:	Resurface from Rt-110 in Harvard easterly to the Concord rotary			
Work Also In:	ACTON BOXBOROUGH HARVARD LITTLETON			

DANVERS	RT 128, DANVERS, 04	087020	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Resurfacing	CON	3400	
Description:	From Lowell St. bridge in Peabody at Peabody - Danvers line to east of Eliott St., Danvers			
Work Also In:	PEABODY			

DANVERS	RT 128, DANVERS, 05	087030	Annual	2-5
%Design:	0	PE	500	
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON		10000
Description:	New interchange on Rt-128 at Cherry Hill Reservoir Park / Kings Grant / Trask Lane / Exit 21			
Work Also In:	BEVERLY			

FRAMINGHAM	RT 30, FRAMINGHAM, 03	110951	Annual	2-5
%Design:	90	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	1750	
Description:	Reconstruct Cochituate Road (Rt-30) from Burger King to Massachusetts Turnpike Exit 13			

MEDWAY	RT-109, MEDWAY, 01	079800	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	1100	
Description:	Reconstruct Rt-109, from Farm St. in Millis to Coffee St. in Medway (project # 1			
Work Also In:	MILLIS			

MILFORD	RT 109, MILFORD, 02	079801	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	500	

Description: Reconstruct Rt-109 in Milford from Birch St. to I-495 (project # 2)

PEABODY	LOWELL ST, PEABODY, 01	040540	Annual	2-5
%Design:	100	PE		
Design Resp:	State	ROW		
Work Type:	No data	CON	1500	

Description: Reconstruct Lowell St. ramps at Rt-128, Peabody, Task - A, Contract III-A

REVERE	RT 1, REVERE, 01	076300	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON		55000

Description: Safety upgrading from Copeland Circle, Revere, to Rt. 128, Lynnfield

Work Also In: MALDEN SAUGUS LYNNFIELD

REVERE	RT 60, REVERE, 03	118150	Annual	2-5
%Design:	0	PE		
Design Resp:	City	ROW		
Work Type:	Traffic	CON		125

Description: Traffic signals and left turn storage on Rt-60 (Squire Road) at Washington Ave. and Wesley St.

Work Also In: MALDEN

SUDBURY	RT 20, SUDBURY, 01	100800	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Traffic	CON	2000	

Description: Rt. 20 (Boston Post Road) at Nobscot Road and Union Ave. (widen, channelize, signals)

WEYMOUTH	RT-3, WEYMOUTH, 03	109101	Annual	2-5
%Design:	0	PE	500	
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON		30000

Description: Rt-3, add-a-lane, from Rt-18 Weymouth south to near Rt-14, Duxbury

Work Also In: HINGHAM ROCKLAND NORWELL HANOVER MARSHFIELD DUXBURY PEMBROKE

FY87 TIP HIGHWAY ELEMENT
CONSOLIDATED PRIMARY

Summary of CONSOLIDATED PRIMARY

12 projects

Items:

	ANN.	2-5	TOT
PE	2	0	2
ROW	0	0	0
CON	7	5	12
Total	9	5	14

Costs:

	ANNUAL	2-5	TOTAL
PE	1000	0	1000
ROW	0	0	0
CON	11250	125125	136375
Total	12250	125125	137375

III.4 RURAL SECONDARY

MILLIS		MILLIS, 7 LOCATIONS, 01	047501	Annual	2-5
%Design:	0		PE		
Design Resp:	Town		ROW		
Work Type:	Reconstruction		CON		1100
Description:	Middlesex, Union, Curve, Exchange, Plain, and Pleasant Sts. intersections				

Summary of RURAL SECONDARY

1 projects

Items:

	ANN.	2-5	TOT
PE	0	0	0
ROW	0	0	0
CON	0	1	1
Total	0	1	1

Costs:

	ANNUAL	2-5	TOTAL
PE	0	0	0
ROW	0	0	0
CON	0	1100	1100
Total	0	1100	1100

III.5 URBAN SYSTEMS CITY OF BOSTON

BOSTON	BOSTON PEDEST SIGNALS,01	006800	Annual	2-5
%Design:	75	PE		
Design Resp:	City	ROW		
Work Type:	Traffic	CON	2500	
Description:	Conversion of 48 pedestrian signals to comply with national codes (Transportation Department			

BOSTON	COLUMBIA RD, BOSTON, 05	015851	Annual	2-5
%Design:	0	PE		
Design Resp:	City	ROW		
Work Type:	No data	CON		1500
Description:	Reconstruct Columbia Road from railroad ROW to Blue Hill Ave.			

BOSTON	MASS. AVE., BOSTON, 00	043801	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	No data	CON		7500
Description:	Reconstruct Massachusetts Ave. from Columbus Ave. to Charles River			

BOSTON	MASS. AVE., BOSTON, 00	043803	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	No data	CON		3800
Description:	Reconstruct Massachusetts Ave. from S. E. Expressway to Edward Everett Square			

BOSTON	NEW DUDLEY ST, BOSTON,01	021300	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	2800	
Description:	New Dudley St. from Roxbury St. to Washington St. (in conjunction with Phase I terminal) (BRA)			

BOSTON	NRTHRN.AVE CONNECT.RDS,0	053001	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Construction	CON		5000
Description:	Construct Sleeper, Pittsburg, parts of Northern Ave. and South Seaport Access			

BOSTON	PIER ACCESS RD.,BOSTON,1	056207	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	No data	CON		2900
Description:	Pier access road			

Summary of URBAN SYSTEMS CITY OF BOSTON

7 projects

Items:

	ANN.	2-5	TOT
PE	0	0	0
ROW	0	0	0
CON	2	5	7
Total	2	5	7

Costs:

	ANNUAL	2-5	TOTAL
PE	0	0	0
ROW	0	0	0
CON	5300	20700	26000
Total	5300	20700	26000

III.6 URBAN SYSTEMS BOSTON URBANIZED AREA

ARLINGTON	ARLINGTON, MASS.AVE., 01	002100	Annual	2-5
%Design: 100		PE		
Design Resp: Town		ROW		
Work Type: Traffic		CON	2300	

Description: ATP # 1, project 81, 14 locations along Massachusetts Ave., Mystic St., Medford St. (Arlington Center area

ASHLAND	ASHLAND, 5 LOCATIONS, 01	002400	Annual	2-5
%Design: 100		PE		
Design Resp: Town		ROW		
Work Type: Traffic		CON	850	

Description: 5 locations, location # 1, 2, 3, 4, 7 and 8 - W. Union St., Summer St., Cherry St.

BELMONT	BELMONT, 7 INTERSEC., 02	004831	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Reconstruction		CON		0

Description: Reconstruct 7 intersections, includes 2 on Concord Ave., 2 on Trapelo Road

BELMONT	BELMONT, 7 LOCATIONS, 01	004830	Annual	2-5
%Design: 75		PE		
Design Resp: Town		ROW		
Work Type: Reconstruction		CON	500	

Description: Reconstruct seven locations

BEVERLY	COMMUN COL RD,BEVERLY,01	016400	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Construction		CON		3500

Description: New access road and bridge over Rt. 28 from Brimbal Ave. to Dunham Road

BOSTON	WASHINGTON ST, BOSTON,01	138500	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: Reconstruction		CON	2300	

Description: Washington St., Dedham Circle, Dedham, to West Roxbury Parkway, Boston (West Roxbury)

Work Also In: DEDHAM

FY87 TIP HIGHWAY ELEMENT
URBAN SYSTEMS BOSTON URBANIZED AREA

BRAINTREE	5 CORS, BRAINTREE, 01	144400	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Construction	CON	2000	
Description:	5 Corners, Rt-37 (Franklin and Granite Sts.), West St. intersection			

BROOKLINE	STA SIG UPD, DIST.4, 01	131365	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Signals	CON	150	
Description:	Traffic signal reconstruction on Rt. 9 at Hammond St., Tully St., Prospect St. and Woodcliff Road			
Work Also In:	FRAMINGHAM NEWTON			

CAMBRIDGE	HARVARD SQ, CAMBRIDGE,01	031140	Annual	2-5
%Design:	24	PE		
Design Resp:	City	ROW		
Work Type:	Reconstruction	CON		600
Description:	Reconstruct Kennedy, Eliot, Bennett Sts. and University Road			

CANTON	WASHINGTON ST, CANTON,01	138650	Annual	2-5
%Design:	75	PE		
Design Resp:	City	ROW		
Work Type:	Traffic	CON	100	
Description:	Traffic signals on Washington St. at Pleasant and Dedham Sts.			

DANVERS	HIGH ST, DANVERS, 01	032215	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON		1000
Description:	Reconstruct High St. from CBD to Rt. 128, (Phase II downtown urban system			

EVERETT	MAIN ST, EVERETT, 01	041810	Annual	2-5
%Design:	75	PE		
Design Resp:	City	ROW		
Work Type:	No data	CON	1200	
Description:	Reconstruct Main street			

FRAMINGHAM	RT 126, FRAMINGHAM, 01	086450	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: Reconstruction		CON	1750	
Description: Safety improvements Rt-126 (Concord St.) and Rt-30 (Cochituate Road)				

LEXINGTON	BEDFORD ST, LEXINGTON,01	004550	Annual	2-5
%Design: 0		PE		
Design Resp: Town		ROW		
Work Type: Reconstruction		CON		3000
Description: Improve Rts. 4 and 225 from Rt. 128 to Winter St.				

LEXINGTON	HARTWELL AVE,LEXINGTON,0	031050	Annual	2-5
%Design: 0		PE		
Design Resp: Town		ROW		
Work Type: Reconstruction		CON		2000
Description: Improve Hartwell Ave. from Bedford St., Maguire Road to Wood St.				

LEXINGTON	MARRETT RD, LEXINGTON,01	043550	Annual	2-5
%Design: 75		PE		
Design Resp: Town		ROW		
Work Type: Reconstruction		CON	900	
Description: Improve Rt. 2A from Rt. 128 to beyond Massachusetts Ave. extension				

LYNN	WASH.+BROAD STS.,LYNN,01	138060	Annual	2-5
%Design: 75		PE		
Design Resp: City		ROW		
Work Type: Reconstruction		CON	2500	
Description: Reconstruct Washington and Broad streets				

MALDEN	EASTERN AVE, MALDEN, 02	023130	Annual	2-5
%Design: 75		PE		
Design Resp: City		ROW		
Work Type: Reconstruction		CON	1000	
Description: Eastern Ave., Lynn St. and Beach St.intersection (channelize, signals, rail road crossing) - Linden				

MALDEN	EASTRN/BROADWAY,MALDEN,1	023125	Annual	2-5
%Design: 75		PE		
Design Resp: City		ROW		
Work Type: Reconstruction		CON	2400	
Description: Reconstruct Eastern Ave.				

FY87 TIP HIGHWAY ELEMENT
URBAN SYSTEMS BOSTON URBANIZED AREA

MALDEN	PLEASANT ST MALL, MALDEN	056650	Annual	2-5
%Design: 90		PE		
Design Resp: City		ROW		
Work Type: Construction		CON	2000	
Description: Construct a mall on Pleasant St.				

MARLBOROUGH	BOUNDARY ST, MARLBORO,01	006870	Annual	2-5
%Design: 5		PE		
Design Resp: City		ROW		
Work Type: Reconstruction		CON		1000
Description: Reconstruct Boundry St. because of flood control dam across Assabet River				
Work Also In: NORTHBOROUGH				

MARLBOROUGH	FELTON ST, MARLBORO, 01	025102	Annual	2-5
%Design: 75		PE		
Design Resp: Town		ROW		
Work Type: Reconstruction		CON	750	
Description: Reconstruct Felton St.				

MARLBOROUGH	MARLBORO PKNG GAR, 01	043505	Annual	2-5
%Design: 0		PE		
Design Resp: City		ROW		
Work Type: Construction		CON		400
Description: Replacement parking for central business district (234 spaces)				

MIDDLETON	RT 114, MIDDLETON, 02	081781	Annual	2-5
%Design: 75		PE		
Design Resp: Town		ROW		
Work Type: Reconstruction		CON	850	
Description: Reconstruct N. Main St. (Rt. 114) from Lakeview Ave. to Boston St. (Middleton Square)				

MILTON	MILTON, 13 LOCATIONS, 01	047600	Annual	2-5
%Design: 100		PE		
Design Resp: Town		ROW		
Work Type: Traffic		CON	624	
Description: 13 locations, Granite / Adams, Bryant / Boulevard etc.				

NATICK	RT-135,3 LOCS.,NATICK,03	090101	Annual	2-5
%Design: 75		PE		
Design Resp: Town		ROW		
Work Type: Traffic		CON	255	
Description: Traffic signals at Rt-135 and 27, the Crossings: Rt-135 and Kendall Lane, and at Hartford and Mill streets				

NEEDHAM	HIGHLAND AV CORRIDOR, 01	032670	Annual	2-5
%Design: 10		PE		
Design Resp: State		ROW		
Work Type: Reconstruction		CON		5000

Description: Needham St. / Highland Ave. corridor from Rt. 128 (Needham) to Centre and Walnut St. intersection
Work Also In: NEWTON

NEWTON	LANGLEY RD, NEWTON, 01	037460	Annual	2-5
%Design: 75		PE		
Design Resp: City		ROW		
Work Type: Reconstruction		CON	225	

Description: Reconstruct junction of Langley Road, Jackson St., and Boylston St. (Rt-9)

NORTH READING	RT 28, NORTH READING, 01	107000	Annual	2-5
%Design: 25		PE		
Design Resp: State		ROW		
Work Type: Reconstruction		CON		2800

Description: Reconstruct Main St. (Rt. 28) from Station 70 to Station 134 + 60 (Reading town line)

NORWOOD	UNIVERSITY AV,NORWOOD,03	135602	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: Signals		CON	300	

Description: Signalize intersection of Canton St. and University Ave.

PEABODY	PEABODY, CBD STS, 02	056056	Annual	2-5
%Design: 75		PE		
Design Resp: City		ROW		
Work Type: Reconstruction		CON	2200	

Description: Contract 'B', Central, Lowell Sts. and Peabody Square

QUINCY	RT 37, QUINCY, 01	112150	Annual	2-5
%Design: 75		PE		
Design Resp: City		ROW		
Work Type: Reconstruction		CON	500	

Description: From Quincy - Braintree town line to West St.

RANDOLPH	RANDOLPH, 7 LOCATIONS,01	059800	Annual	2-5
%Design:	50	PE		
Design Resp:	State	ROW		
Work Type:	Traffic	CON		1000
Description:	7 locations (formerly 10) Rt. 28 at Memorial Dr. / Short St. / Rt. 139 / Pleasant St./ at Fire Station			

REVERE	BEACH ST., REVERE, 01	025105	Annual	2-5
%Design:	0	PE		
Design Resp:	City	ROW		
Work Type:	Reconstruction	CON		3000
Description:	Reconstruct Beach street as an east / west arterial			

SAUGUS	WALNUT + MAIN STS.,SAUGU	024710	ANNUAL	2-5
%Design:	0	PE		
Design Resp:	City	ROW		
Work Type:	Reconstruction	CON		1600
Description:	Reconstruct Walnut and Main Sts., Saugus			

STONEHAM	MONTVALE AVE,STONEHAM,01	048290	Annual	2-5
%Design:	0	PE		
Design Resp:	Town	ROW		
Work Type:	Reconstruction	CON		700
Description:	Reconstruct Montvale Ave. from Rt. I-93 to Rt-28			

WAKEFIELD	MAIN ST, WAKEFIELD, 03	042410	Annual	2-5
%Design:	75	PE		
Design Resp:	Town	ROW		
Work Type:	Reconstruction	CON	1200	
Description:	Reconstruct Main St. (Rt-129) from Lowell St. to Salem st.			

WALPOLE	MAIN ST, WALPOLE, 01	042450	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	No data	CON		600
Description:	Reconstruct Main St. (Rt-1A), Elm St., and Front St. / Common St. intersection			

WALPOLE	WALPOLE, 3 LOCATIONS, 01	137400	Annual	2-5
%Design:	50	PE		
Design Resp:	State	ROW		
Work Type:	Traffic	CON		1100
Description:	3 locations, Washington St. and High Plain St. / at Common St., East St. and High Plain st.			

WALTHAM	RT-20, WALTHAM, 04	101202	Annual	2-5
%Design: 100		PE		
Design Resp: Town		ROW		
Work Type: Reconstruction		CON	2600	
Description: Reconstruct Main and School Sts., replace 2-level parking deck				

WATERTOWN	NO.BEACON + WATERTOWN ST	049610	Annual	2-5
%Design: 75		PE		
Design Resp: Town		ROW		
Work Type: Reconstruction		CON	1985	
Description: Reconstruct North Beacon (Rt. 20) and Watertown St. (Rt. 16)				

WAYLAND	RT 27, WAYLAND, 01	105120	Annual	2-5
%Design: 75		PE		
Design Resp: Town		ROW		
Work Type: Reconstruction		CON	100	
Description: Install traffic control system at Main St. (Rt. 27) and at E. and W. Plain Sts.				

WEYMOUTH	JACKSON SQ, WEYMOUTH, 01	035570	Annual	2-5
%Design: 75		PE		
Design Resp: Town		ROW		
Work Type: Reconstruction		CON	900	
Description: Urban design plan of lower Jackson Sq. and 2 major roadways, Broad and Commercial Sts.				

WILMINGTON	RT-129, WILMINGTON, 02	089201	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: Construction		CON	2000	
Description: Additional ramps I-93 / Rt-129, bridge reconstruction, widen Rt-129 to AVCO plant				
Work Also In: READING				

WILMINGTON	RT-62, WILMINGTON, 02	118606	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Reconstruction		CON		0
Description: Connector 'B' from Connector 'A' N. W. to intersection Rts. 129 / 38 / Middlesex				

WINTHROP	VETERANS RD, WINTHROP,01	135820	Annual	2-5
%Design:	0	PE		
Design Resp:	Town	ROW		
Work Type:	Reconstruction	CON		1400
Description:	Reconstruct Veterans Road			

WOBURN	MISHAWUM RD, WOBURN, 02	047901	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Other	CON	600	
Description:	Mishawum commuter parking facility at Rt. 128 and B and M railroad, Woburn			

WOBURN	WASHINGTON ST, WOBURN,01	139350	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	800	
Description:	Washington St. at Rt. 128 ramps, road widening and signalization			

Summary of URBAN SYSTEMS BOSTON URBANIZED AREA

48 projects

Items:

	ANN.	2-5	TOT
PE	0	0	0
ROW	0	0	0
CON	30	18	48
Total	30	18	48

Costs:

	ANNUAL	2-5	TOTAL
PE	0	0	0
ROW	0	0	0
CON	35839	28700	64539
Total	35839	28700	64539

III.7 HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION

ACTON	RT 27, ACTON, 03		104749	Annual	2-5
%Design:	0		PE		
Design Resp:	State		ROW		
Work Type:	Bridge reconstruction		CON		800
Description:	Bridge # A-2-4, Rt. 27 over B and M railroad				

ACTON	RT 27, ACTON, 04		104750	Annual	2-5
%Design:	0		PE		
Design Resp:	State		ROW		
Work Type:	Bridge reconstruction		CON		800
Description:	Bridge # A-2-5, Rt. 27 over B and M railroad				

ACTON	RT-111, ACTION, 04		080811	Annual	2-5
%Design:	0		PE		
Design Resp:	State		ROW		
Work Type:	Bridge reconstruction		CON		800
Description:	Bridge # A-2-6, Rt. 111 over Fort Pond Brook				

ASHLAND	HIGH ST., ASHLAND, 01		032140	Annual	2-5
%Design:	0		PE		
Design Resp:	State		ROW		
Work Type:	Bridge reconstruction		CON		0
Description:	Bridge A-14-12, High St. over railroad				

ASHLAND	HOWE ST., ASHLAND, 01		034107	Annual	2-5
%Design:	0		PE		
Design Resp:	State		ROW		
Work Type:	Bridge reconstruction		CON		1000
Description:	Reconstruct bridge A-14-13, Howe St. over Conrail				

ASHLAND	HOWE ST., ASHLAND, 02		034108	Annual	2-5
%Design:	0		PE		
Design Resp:	State		ROW		
Work Type:	Bridge reconstruction		CON		1000
Description:	Reconstruct bridge A-14-08, Howe St. over Sudbury River				

BELMONT	CLARK ST., BELMONT, 02		015296	Annual	2-5
%Design:	0		PE		
Design Resp:	State		ROW		
Work Type:	Bridge reconstruction		CON		1000
Description:	Reconstruct Clark St. bridge, B-7-1, over railroad				

FY87 TIP HIGHWAY ELEMENT
HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION

BOSTON	ADAMS ST, BOSTON, 01	000600	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		2000
Description: Bridge B-16-3=M-25-2 over Neponset River (Dorchester, Milton Lower Falls)				
Work Also In: MILTON				

BOSTON	BELLEVUE ST, BOSTON, 01	004805	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON	1000	
Description: Reconstruct Bellevue St. bridge, B-16-117, over MBTA				

BOSTON	BROADWAY, BOSTON, 01	008240	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		0
Description: Bridge reconstruction, B-16-125 Broadway over Fort Point Channel				

BOSTON	CHELSEA ST.BOSTON, 03	014002	Annual	2-5
%Design: 0		PE		
Design Resp: City		ROW		
Work Type: Bridge reconstruction		CON		850
Description: Emergency replacement of B-16-20=C-9-4, Chelsea St. bridge over Chelsea Creek				
Work Also In: CHELSEA				

BOSTON	COLUMBUS AVE, BOSTON, 01	015880	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		0
Description: Replacement of bridge B-16-46 over railroad				

BOSTON	CONGRESS ST., BOSTON, 01	016555	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		3000
Description: Replacement of Congress St. bridge, B-16-32, over Ft. Point Channel				

BOSTON	CUMMINS HWY, BOSTON, 03	017903	Annual	2-5
%Design:	75	PE		
Design Resp:	City	ROW		
Work Type:	Bridge reconstruction	CON	1000	
Description:	Reconstruct bridge B-16-106, Cummins Highway over railroad			

BOSTON	DANA AVE, BOSTON, 01	018400	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		900
Description:	Bridge B-16-170 over Conrail			

BOSTON	FITZGERALD,XWY,BOSTON,01	025651	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	No data	CON		1000
Description:	Rehabilitate viaduct from Massachusetts Ave. to ramp P at Massachusetts Turnpike			

BOSTON	GARDNER ST, BOSTON, 01	027750	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		800
Description:	Bridge # B-16-175, Gardner St. over Penn Central railroad			

BOSTON	HARVARD BR, BOSTON, 01	031100	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON	12000	
Description:	Bridge B-16-12=C-1-3 Massachusetts Ave. over Charles River			
Work Also In:	CAMBRIDGE			

BOSTON	HYDE PARK AV, BOSTON, 01	034880	Annual	2-5
%Design:	75	PE		
Design Resp:	City	ROW		
Work Type:	Bridge reconstruction	CON	1000	
Description:	Reconstruct bridge B-16-35, Hyde Park Ave. over Mother Brook			

FY87 TIP HIGHWAY ELEMENT
HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION

BOSTON	N.WASHINGTN ST,BOSTON,01	049905	Annual	2-5
%Design:	0	PE		
Design Resp:	City	ROW		
Work Type:	Bridge reconstruction	CON		500
Description:	Bridge reconstruct, B-16-016, N. Washington St. over Charles River			

BOSTON	NORTHERN AVE, BOSTON, 01	053000	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		15000
Description:	Bridge B-16-184 over Ft. Point Channel, relocate Northern - Atlantic Aves. and B St.			

BOSTON	SARATOGA ST, BOSTON, 02	127401	Annual	2-5
%Design:	0	PE		
Design Resp:	City	ROW		
Work Type:	Bridge reconstruction	CON		1800
Description:	Reconstruct bridge B-16-214, Saratoga St. over MBTA			

BOSTON	SILVER ST, BOSTON, 01	129320	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		600
Description:	Reconstruct Silver St. bridge, B-16-204, over Conrail			

BOSTON	SUMMER ST, BOSTON, 02	132701	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		1000
Description:	Reconstruct bridge # B-16-31, Summer St. over Fort Point Channel			

BOSTON	SUMMER ST, BOSTON, 03	132702	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		1000
Description:	Reconstruct bridge # B-16-124, Summer St. over 'A' Street			

BOSTON	SUMMER ST, BOSTON, 04	132703	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		1000
Description:	Reconstruct bridge # B-16-231, Summer St. over 'B' street			

BOSTON	SUMMER ST, BOSTON, 05	132704	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		1000
Description:	Reconstruct bridge # B-16-361, Summer St. over 'C' street			

BOSTON	SUMNER ST, BOSTON, 01	132700	Annual	2-5
%Design:	25	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		500
Description:	Bridge B-16-76 over Conrail, East Boston			

BOSTON	WEST FIFTH ST, BOSTON,01	140300	Annual	2-5
%Design:	80	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		200
Description:	Bridge B-16-201 over Conrail, South Boston (D St. - Dorchester St.)			

BOSTON	WEST FOURTH ST,BOSTON,02	140401	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON	2000	
Description:	Bridge B-16-126 over Conrail, South Boston			

BOSTON	WEST SIXTH ST, BOSTON,01	140700	Annual	2-5
%Design:	25	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		225
Description:	Bridge B-16-200 over Conrail			

BRAINTREE	PLAIN ST, BRAINTREE, 01	056400	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON	800	
Description:	Bridge B-21-15, Plain St. (old Rt. 128) over Conrail			

FY87 TIP HIGHWAY ELEMENT
HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION

CAMBRIDGE	RT 2, CAMBRIDGE, 02	096600	Annual	2-5
%Design: 25		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		5000
Description: Bridge C-1-20 (truss bridge) over B and M railroad and MBTA (Alewife Brook Parkway) MDC				

CANTON	CHAPMAN ST, CANTON, 01	013500	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON	1199	
Description: Bridge # C-2-9 over Conrail				

CANTON	HIGH ST., CANTON, 01	032209	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON	800	
Description: Replace bridge C-2-8				

CANTON	RT 138, CANTON, 03	090460	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		250
Description: Bridge C-2-28 Rt-138 over Rt-128 (deck replacement)				

CANTON	SPAULDING ST, CANTON, 01	130555	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON	90	
Description: Removal of bridge # C-2-6 over P. C. railroad				

CHELSEA	BELLINGHAM ST,CHELSEA,01	004810	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		800
Description: C-9-3, Bellingham St. over Conrail				

CHELSEA	BROADWAY, CHELSEA, 01	008250	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON	1000	
Description: Bridge # C-9-2, Broadway over MBTA / B and M				

FY87 TIP HIGHWAY ELEMENT
HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION

CONCORD	RT 2, CONCORD, 01	096900	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON	4500	

Description: Reconstruct bridge C-19-22 (Rt-2 over B and M railroad) plus Rt.-2 from Rt-62 north

CONCORD	RT 2, CONCORD, 02	096903	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON	4000	

Description: Bridge # C-19-20 on Rt-2 over MBTA / B and M railroad, near Fairhaven Road

DEDHAM	SPRING ST., DEDHAM, 01	030835	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		3000

Description: Bridge # B-16-177=D-5-6, Spring St. over Charles River
Work Also In: BOSTON

FRAMINGHAM	BOSTON RD, FRAMINGHAM,01	006850	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		225

Description: Bridge F-7-27 over Rt. 9 W. B. to railroad (Marlboro overpass) deck replacement

FRANKLIN	RT 140, FRANKLIN, 02	092000	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		800

Description: Bridge F-8-5, Unionville bridge, over Conrail

GLOUCESTER	CENTENNIAL ST,GLOUCHESTE	011650	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		800

Description: Bridge # G-5-15, Centennial Ave. over B and M railroad

HAMILTON	CUTLER RD, HAMILTON, 01	018115	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		800

Description: Bridge # H-3-1, Cutler Road over MBTA

HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION

HANOVER		RT 53, HANOVER, 01	114500	Annual	2-5
%Design:	0		PE		
Design Resp:	State		ROW		
Work Type:	Bridge reconstruction		CON		100
Description:	Bridge H-6-5=P-5-5, Columbia Road over North River Pembrook - Hanover				
Work Also In:	PEMBROKE				

LITTLETON		GREAT RD, LITTLETON, 01	029225	Annual	2-5
%Design:	0		PE		
Design Resp:	State		ROW		
Work Type:	Bridge reconstruction		CON		1000
Description:	Bridge L-13-1, Great Road (Rt-119) over B and M railroad				

LYNN		CHESTNUT ST, LYNN, 01	014203	Annual	2-5
%Design:	75		PE		
Design Resp:	State		ROW		
Work Type:	Bridge reconstruction		CON	800	
Description:	Replacement of bridge L-18-10, Chestnut St. over MBTA				

LYNN		FAYETTE ST, LYNN, 01	025103	Annual	2-5
%Design:	75		PE		
Design Resp:	State		ROW		
Work Type:	Bridge reconstruction		CON	800	
Description:	Replacement of bridge L-18-11, Fayette St. over MBTA				

LYNN		GREEN ST, LYNN, 01	029560	Annual	2-5
%Design:	75		PE		
Design Resp:	State		ROW		
Work Type:	Bridge reconstruction		CON	800	
Description:	Replacement of bridge L-18-9, Green St. over MBTA				

MALDEN		CLIFTON ST, MALDEN, 01	015430	Annual	2-5
%Design:	0		PE		
Design Resp:	State		ROW		
Work Type:	Bridge reconstruction		CON		1200
Description:	Reconstruct bridge # M-1-6, Clifton St. over B and M railroad and MBTA				

MALDEN	MOUNTAIN AV, MALDEN, 01	048720	Annual	2-5
%Design: 75		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON	1000	

Description: Reconstruct bridge # M-1-5, Mountain Ave. over B and M railroad and MBTA

MARSHFIELD	RT 3A, MARSHFIELD, 01	110200	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		3000

Description: Bridge S-7-2=M-7-2 drawbridge over North River, Marshfield / Scituate
Work Also In: SCITUATE

MEDFORD	COLLEGE AVE., MEDFORD,01	015555	Annual	2-5
%Design: 40		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		75

Description: Reconstruct bridge M-12-12 over B and M railroad and MBTA

MEDFORD	GROVE ST, MEDFORD, 01	030100	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		500

Description: Bridge M-12-15 over B and M railroad New Hampshire Route Main line

MEDFORD	NORTH ST, MEDFORD, 01	052300	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		800

Description: Bridge M-12-14 over B and M railroad New Hampshire Route Main line

MEDFORD	RT 38, MEDFORD, 01	112200	Annual	2-5
%Design: 0		PE		
Design Resp: State		ROW		
Work Type: Bridge reconstruction		CON		400

Description: Bridge M-12-4, Winthrop St. (Rt-38) over Mystic River

FY87 TIP HIGHWAY ELEMENT
HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION

MILLIS	PLAIN ST, MILLIS, 01	056560	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		800
Description:	M-23-8, Plain Street over Conrail			

NATICK	BODEN LANE, NATICK, 01	006251	Annual	2-5
%Design:	0	PE		
Design Resp:	Sta e	ROW		
Work Type:	Bridge reconstruction	CON		800
Description:	N-3-12, Boden Street over Conrail			

NATICK	LOKER ST, NATICK, 01	039360	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		800
Description:	N-3-13, Loker Street over Conrail			

NATICK	MARION ST, NATICK, 01	043440	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		1000
Description:	Replace bridge N-3-3, Marion St. over MBTA, Conrail			

NATICK	NORTH MAIN ST.,NATICK,01	052160	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		1000
Description:	Reconstruct bridge N-03-06, N. Main St. over Conrail			

NATICK	WALNUT ST., NATICK, 01	137315	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		1000
Description:	Reconstruct bridge N-03-05, Walnut St. over Conrail			

NATICK	WASHINGTON ST, NATICK,01	139180	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON	800	
Description:	Replace bridge # N-3-4, Washington St. over railroad tracks			

NEEDHAM	HIGH ROCK ST, NEEDHAM,01	032451	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON	1000	
Description:	Bridge # N-4-24 (High Rock St.) over railroad			

NEWTON	HAMMOND ST, NEWTON, 01	030500	Annual	2-5
%Design:	10	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		1500
Description:	Bridge N-12-32 over MBTA Riverside line (Highland branch) Chestnut Hill			

NORFOLK	MAIN ST, NORFOLK, 01	042100	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON	900	
Description:	Bridge N-13-3 over Franklin branch of Conrail			

REVERE	RAILROAD AVE, REVERE, 01	059720	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		800
Description:	R-5-55, Railroad Ave. over Conrail			

REVERE	RT 1A, REVERE, 02	077700	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		500
Description:	Bridge R-5-4 Beach St. (Route 1A) over B and M railroad			

REVERE	RT 60, REVERE, 01	118000	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Maintenance	CON		300
Description:	Bridge R-5-11, Rt-60 Revere over Boston and Maine railroad			

SALEM	BEVERLY-SALEM PROJ., 01	005402	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Bridge construction	CON	10000	
Description:	Contract # 1, Bridge St. bypass, from Saunder St. to south of Bridge st. connector			

SALEM	BEVERLY-SALEM PROJ., 02	005403	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Bridge construction	CON	20000	
Description:	Contract # 2, Beverly / Salem bridge over Danvers River, B-11-4			
Work Also In:	BEVERLY			

SALEM	BEVERLY-SALEM PROJ., 03	005404	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	No data	CON	22000	
Description:	Contract # 3, North River viaduct and approaches			

SALEM	BEVERLY-SALEM PROJ., 04	005405	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Construction	CON	6500	
Description:	Bypass road - Boston Street to North Street			

SAUGUS	ESSEX ST, SAUGUS, 01	024700	Annual	2-5
%Design:	50	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		500
Description:	Bridge S-5-17 over Rt-1 plus improvements along Essex St.			

SAUGUS	RT 107, SAUGUS, 01	079505	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		100
Description:	Bridge # S-5-3 (Rt-107) over east branch of Pines River			

SCITUATE	ED,FOSTER RD,SCITUATE,01	023399	ANNUAL	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		60
Description:	Bridge S-7-4, Edward Foster Road over Tidal Creek (Veterans Memorial Bridge)			

SOMERVILLE	BEACON ST, SOMERVL, 01	004350	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON	1500	
Description:	Replace bridge S-17-19 over B and M railroad and MBTA			

SOMERVILLE	CEDAR ST, SOMERVILLE, 01	011600	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		500
Description:	Bridge # S-17-12 over B and M railroad N. H. Route Main line			

SOMERVILLE	DANE ST, SOMMERVILLE, 01	018449	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		800
Description:	S-17-18, Dane Street over B and M railroad and MBTA			

SOMERVILLE	LOWELL ST, SOMERVILLE,01	040550	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		1500
Description:	Reconstruct bridges S-17-11 and S-17-15 over MBTA and B and M railroad			

SOMERVILLE	SCHOOL ST, SOMERVILLE,01	127900	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		500
Description:	Bridge S-17-8, over B and M railroad N. H. Route Main line			

SOMERVILLE	WALNUT ST, SOMERVILLE,01	137349	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		1000
Description:	S-17-6, Walnut Street over B and M			

SOUTHBOROUGH	RT 85, SOUTHBOROUGH, 01	123330	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON	1000	
Description:	Replace bridge # S-20-5 on Rt-85 (Marlborough Road) over Conrail			

SOUTHBOROUGH	RT-85, SOUTHBORO, 02	123331	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	No data	CON		425
Description:	Reconstruct bridge S-20-15, Rt-85 over Rt-9			

FY87 TIP HIGHWAY ELEMENT
HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION

SWAMPSCOTT	DANVERS RD,SWAMPSCOTT,01	018700	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		1000
Description:	Bridge # S-34-1 over Boston and Maine railroad			

SWAMPSCOTT	ESSEX ST, SWAMPSCOTT, 01	024800	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		150
Description:	Bridge S-34-2 over Boston and Maine railroad			

WALPOLE	KENDALL ST, WALPOLE, 01	036150	Annual	2-5
%Design:	90	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON	1000	
Description:	Replace bridge W-3-12 Kendall St. over MBTA tracks			

WALPOLE	WEST ST, WALPOLE, 01	141058	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON	800	
Description:	W-3-20, West Street over Conrail			

WALPOLE	WEST ST, WALPOLE, 02	141059	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		600
Description:	W-3-21, West Street over Conrail			

WAYLAND	SHERMAN BRDGE RD,WAYLAND	129110	Annual	2-5
%Design:	25	PE		
Design Resp:	Town	ROW		
Work Type:	Bridge reconstruction	CON		1000
Description:	Bridge # W-11-5=S-31-1, Sherman bridge Road			
Work Also In:	SUDBURY			

WELLESLEY	KINGSBRY ST,WELLESLEY,01	036500	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		1000
Description:	Bridge W-13-8 over Conrail			

WELLESLEY	ROUTE 9, WELLESLEY, 03	125299	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		1000
Description:	Reconstruct bridge W-13-06, Route 9 over Conrail			

WELLESLEY	WESTON RD.WELLESLEY, 01	141630	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		1000
Description:	Reconstruct bridge W-13-10, Weston Road over Conrail			

WESTON	SOUTH ST, WESTON, 01	130375	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		800
Description:	Bridge # W-04-08, South St. over Stoney Brook			

WESTWOOD	BLUE HILL DR,WESTWOOD,02	006201	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		0
Description:	Replace bridge W-31-04, Blue Hill Dr. over railroad (also known as Greenlodge St.			

WILMINGTON	BUTTERS ROW,WILMINGTON01	009950	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		800
Description:	Bridge # W-38-3, Butters Row over MBTA / B and M railroad			

WILMINGTON	EAMES ST, WILMINGTON, 01	022041	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON		500
Description:	Reconstruct bridge # W-38-1, Eames St. over railroad			

WILMINGTON	LAKE ST, WILMINGTON, 01	036981	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Bridge reconstruction	CON	800	
Description:	Reconstruct Lake St. bridge W-38-7 over railroad			

WILMINGTON		RT 62, WILMINGTON, 01	118605	Annual	2-5
%Design:	20		PE		
Design Resp:	State		ROW		
Work Type:	Bridge reconstruction		CON		3500
Description:	Replace bridge W-38-4, Burlington Ave. (Rt-6 over B and M railroad				

WOBURN		NEW BOSTON ST, WOBURN,01	051200	Annual	2-5
%Design:	0		PE		
Design Resp:	State		ROW		
Work Type:	Bridge reconstruction		CON		1500
Description:	Bridge W-43-5 over Boston and Maine railroad				

Summary of HIGHWAY BRIDGE REPLACEMENT AND REHABILITATION

102 projects

Items:

	ANN.	2-5	TOT
PE	0	0	0
ROW	0	0	0
CON	28	74	102
Total	28	74	102

Costs:

	ANNUAL	2-5	TOTAL
PE	0	0	0
ROW	0	0	0
CON	99089	82260	181349
Total	99089	82260	181349

III.8 HAZARD ELIMINATION

ACTON	RT-111, ACTON, 05	080812	Annual	2-5
%Design:	75	PE		
Design Resp:	Town	ROW		
Work Type:	Signals	CON	400	
Description:	Install traffic control system at Massachusetts Ave., Central St. at Arlington Sts.			

BELLINGHAM	RTS.126,140,BELLINGHAM,0	086302	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Signals	CON		60
Description:	Install traffic control signal and associated work, intersection of Rts. 126 and 140			

BRAINTREE	ELM ST., BRAINTREE, 01	024005	Annual	2-5
%Design:	0	PE		
Design Resp:	City	ROW		
Work Type:	Reconstruction	CON		900
Description:	Reconstruct intersection of Elm, Adams, and Middle streets			

BURLINGTON	RT.3A, BURLINGTON, 01	086907	Annual	2-5
%Design:	0	PE		
Design Resp:	Town	ROW		
Work Type:	No data	CON		126
Description:	Addition of right turn Lane on Rt. 3A (Cambridge St.) to Wilmington Road, traffic signal modification			

HANOVER	RT 53, HANOVER, 04	114800	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	2700	
Description:	Improve Rt-53 from Rt-3 to Old Washington St. and Pond st. intersection			

HOPKINTON	MAIN ST.HOPKINTON, 01	041940	Annual	2-5
%Design:	75	PE		
Design Resp:	Town	ROW		
Work Type:	No data	CON	700	
Description:	Install traffic control signals and widen Main St.			

READING	RT 28, READING, 02	107311	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Signals	CON		300
Description:	Reconstruct and signalize S. Main St. (Rt. 28) at Summer st.			

STOUGHTON	RT 138,STOUGHTON,01	091000	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Traffic	CON		75
Description:	Rt. 138 (Washington St.) at Central St.			

WINCHESTER	RT.3, WINCHESTER, 01	143201	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	120	
Description:	Reconstruct intersection of Rt. 3 (Cambridge St.) and Wildwood St. Winchester			

WINTHROP	RT-145, WINTHROP, 01	093380	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Signals	CON		0
Description:	Install traffic signal at intersection of Revere St., Highland and Crest Ave.			

Summary of HAZARD ELIMINATION

10 projects

Items:

	ANN.	2-5	TOT
PE	0	0	0
ROW	0	0	0
CON	4	6	10
Total	4	6	10

Costs:

	ANNUAL	2-5	TOTAL
PE	0	0	0
ROW	0	0	0
CON	3920	1461	5381
Total	3920	1461	5381

III.9 INTERSTATE TRANSFER

BOSTON	BLUE HILL AVE, BOSTON,02	006001	Annual	2-5
%Design:	0	PE		
Design Resp:	City	ROW		
Work Type:	No data	CON		4000
Description:	Reconstruct Blue Hill Ave. from Grove Hall to Dudley St.			

BOSTON	COMMONWEALTH AV,BOSTN,02	016200	Annual	2-5
%Design:	95	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON		11000
Description:	Commonwealth Ave. Part II (Section B), Rt. 30, Packard's Corner (Brighton Ave.) to Warren St.			

BOSTON	HERALD ST., BOSTON, 01	032008	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	No data	CON		11000
Description:	Herald St., Boston, Interstate Transfer, 5 year list			

BOSTON	HUNTINGTON AVE,BOSTON,03	034700	Annual	2-5
%Design:	75	PE		
Design Resp:	City	ROW		
Work Type:	Reconstruction	CON	5500	
Description:	Fenwood Ave. (Brigham Circle) to South Huntington Ave. (Contract C)			

BOSTON	N. STATION, URB RENEW,PH	052170	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON		3000
Description:	Phase 1, reconstruct Merrimac St. Causeway St., and Lomasney Way			

BOSTON	N.STATION,URB REN PHSEII	052171	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON		2500
Description:	Phase II			

BOSTON	TRF CNTR SYS 4 BOSTON,04	134223	Annual	2-5
%Design:	100	PE		
Design Resp:	State	ROW		
Work Type:	Traffic	CON	3264	

Description: Centralized computer traffic control system at approximately 200 locations in Boston

CAMBRIDGE	LECHMERE,PHASE IV,CAMBR.	037823	Annual	2-5
%Design:	0	PE		
Design Resp:	City	ROW		
Work Type:	Reconstruction	CON		1500

Description: Reconstruct Binney St.

CAMBRIDGE	RINDGE AVE.EXT,CAMBRIDGE	060480	Annual	2-5
%Design:	0	PE		
Design Resp:	City	ROW		
Work Type:	Construction	CON		4500

Description: Construct Rindge Ave. extension from Alewife Parkway over railroad to New St. and Concord Ave.

CONCORD	RT 2, CONCORD, 05	096906	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	500	

Description: Concord, Walden Street (Rt-126)
Work Also In: ACTON

CONCORD	RT-2, CONCORD, 04	096905	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	997	

Description: Acton, School and Weatherbee Sts., and access to land fill
Work Also In: ACTON

LINCOLN	RT 2, LINCOLN, 01	097500	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	2500	

Description: Safety upgrading from Rt-128, west to near Bedford Road, Lincoln
Work Also In: LEXINGTON

LINCOLN	RT-2, LINCOLN, 02	097501	Annual	2-5
%Design:	75	PE		
Design Resp:	State	ROW		
Work Type:	Reconstruction	CON	3500	
Description:	Safety upgrading of Bedford Road intersection at Rt. 2 (Lincoln)			

MEDFORD	RT 16, MEDFORD, 02	094600	Annual	2-5
%Design:	75	PE		
Design Resp:	City	ROW		
Work Type:	Traffic	CON	400	
Description:	Intersection of Mystic Valley Parkway (Rt. 16) and Winthrop St. (Rt. 38), signal updating			

NEWTON	COMMONWEALTH AV,NEWTON,0	016250	Annual	2-5
%Design:	0	PE		
Design Resp:	City	ROW		
Work Type:	Reconstruction	CON		1500
Description:	Redesign and reconstruct Commonwealth Ave.			

NEWTON	COMMONWEALTH AV,NEWTON,2	016251	Annual	2-5
%Design:	20	PE		
Design Resp:	City	ROW		
Work Type:	Reconstruction	CON		4000
Description:	Redesign and reconstruct Commonwealth Ave.			

NEWTON	COMMONWEALTH AV,NEWTON,3	016252	Annual	2-5
%Design:	0	PE		
Design Resp:	City	ROW		
Work Type:	Reconstruction	CON		4000
Description:	Redesign and reconstruct Commonwealth Ave.			

NORWOOD	UNIVERSITY AV,NORWOOD,02	135601	Annual	2-5
%Design:	75	PE		
Design Resp:	Town	ROW		
Work Type:	No data	CON	2800	
Description:	University Ave. Phase 2, University Ave. and Everett St.			

SCITUATE	FRONT ST, SCITUATE, 01	027450	Annual	2-5
%Design:	75	PE		
Design Resp:	City	ROW		
Work Type:	Reconstruction	CON	3500	
Description:	Intersection of First Parish Road, Kent St. and Edward Foster Road to Beaver Dam Road			

SOMERVILLE	HIGHLAND AVE,SOMERVILLE,	032655	Annual	2-5
%Design:	25	PE		
Design Resp:	City	ROW		
Work Type:	Reconstruction	CON		0
Description:	Reconstruct Highland Ave. from Medford St. to Cutter Ave.			

WEYMOUTH	WEYMOUTH LANDING, 01	142120	Annual	2-5
%Design:	75	PE		
Design Resp:	Town	ROW		
Work Type:	Reconstruction	CON	1100	
Description:	Reconstruction, minor widening, and signals			
Work Also In:	BRAINTREE			

Summary of INTERSTATE TRANSFER

21 projects

Items:

	ANN.	2-5	TOT
PE	0	0	0
ROW	0	0	0
CON	10	11	21
Total	10	11	21

Costs:

	ANNUAL	2-5	TOTAL
PE	0	0	0
ROW	0	0	0
CON	24061	47000	71061
Total	24061	47000	71061

III.10 UNDETERMINED

GLOUCESTER	GLOUCESTER AV BR, 01	028310	Annual	2-5
%Design:	0	PE		
Design Resp:	State	ROW		
Work Type:	Fencing	CON		0

Description: Install anti-missile fence on bridge # G-5-16 over railroad

Summary of UNDETERMINED

1 projects

Items:

	ANN.	2-5	TOT
PE	0	0	0
ROW	0	0	0
CON	0	1	1
Total	0	1	1

Costs:

	ANNUAL	2-5	TOTAL
PE	0	0	0
ROW	0	0	0
CON	0	0	0
Total	0	0	0

III.11 Highway Capital Program Summary

Federal Funds Available

Funding Category	FY86	FY87	Total
Interstate	296800	143059	439859
Interstate Resurfacing (4R)	14238	37566	51804
Consolidated Primary	30336	47282	77618
Rural Secondary	2441	6294	8735
Urban Systems, City of Boston	11590	2303	13893
Urban Syst Boston Urbaniz Area	5762	10084	15846
Hwy Bridge Replacement and Rehab	76695	50933	127628
Hazard Elimination	3829	4026	7855
Interstate Transfer	3187	9921	13108

NOTE: All figures are funds available statewide, except for Urban Systems and Interstate Transfer.
The table presents each funding category's unobligated FY86 funds still available, the FY87 apportionment, and the total funds available for use in FY87.

FY87 TIP HIGHWAY ELEMENT
HIGHWAY CAPITAL PROGRAM SUMMARY

Funding Category		ANNUAL	2-5	TOTAL
INTERSTATE	: Cost	212820	2710065	2922885
8 projects	:Items	8	2	10
INTERSTATE RESURFACING (4R)	: Cost	46951	72400	119351
15 projects	:Items	10	5	15
CONSOLIDATED PRIMARY	: Cost	12250	125125	137375
12 projects	:Items	9	5	14
RURAL SECONDARY	: Cost	0	1100	1100
1 projects	:Items	0	1	1
URBAN SYSTEMS CITY OF BOSTON	: Cost	5300	20700	26000
7 projects	:Items	2	5	7
URBAN SYST BOSTON URBANIZ AREA	: Cost	35839	28700	64539
48 projects	:Items	30	18	48
HWY BRIDGE REPLACEMENT AND REHAB	: Cost	99089	82260	181349
102 projects	:Items	28	74	102
HAZARD ELIMINATION	: Cost	3920	1461	5381
10 projects	:Items	4	6	10
INTERSTATE TRANSFER	: Cost	24061	47000	71061
21 projects	:Items	10	11	21
UNDETERMINED	: Cost	0	0	0
1 projects	:Items	0	1	1
All funding categories	: Cost	440230	3088811	3529041
225 projects	:Items	101	128	229

Total highway projects: 225

Items:

	ANN.	2-5	TOT
PE	3	0	3
ROW	1	0	1
CON	97	128	225
Total	101	128	229

Costs:

	ANNUAL	2-5	TOTAL
PE	31000	0	31000
ROW	10000	0	10000
CON	399230	3088811	3488041
Total	440230	3088811	3529041

IV. APPENDIX

IV.1 ABBREVIATIONS AND ACRONYMS USED IN THE TIP

AC	Alternating current, the kind of electric power used in most domestic applications.
ATP	Areawide TOPICS Plan, intersection and local street improvements recommended by the Traffic Operations Program to Increase Capacity and Safety of the early 1970's.
B&M	Boston and Maine Railroad, operates commuter rail service under contract to the MBTA.
BTPR	Boston Transportation Planning Review, a study conducted over the period 1970-1972.
CPS	Corridor Planning Study identification and evaluation of alternative transportation improvements to meet previously identified needs.
CRIP	Commuter Rail Improvement Program, a major upgrading project included in this document.
CTPS	Central Transportation Planning Staff, the interagency staff responsible for a large part of the technical transportation planning work in the Boston Region.
DC	Direct current, the kind of electric power used by a subway car, streetcar, or trackless trolley.
DPW	Department of Public Works, usually referring to the Massachusetts Department of Public Works. (See MDPW).
E&H	Elderly and Handicapped
EIS	Environmental Impact Statement or Study
el	elevated, usually referring to an elevated transit structure
EOTC	Executive Office of Transportation and Construction. The state cabinet-level agency responsible for transportation.
FHWA	Federal Highway Administration, the agency responsible for administering the federal highway grant programs.

Abbreviations and Acronyms Used in the TIP

FY	Fiscal year. The federal fiscal year runs from October 1 to September 30, the state fiscal year from July 1 to June 30, and the MBTA fiscal year coincides with the calendar year. Fiscal year number refers to calendar year in which fiscal year ends. For example, federal fiscal year 1977, or FY77, ends on September 30, 1977.
Hz	Hertz, or cycles per second. Measures the frequency of sound, or alternating electric current.
I-95	Interstate 95. One section of this route was planned to go through downtown Boston until plans were scrapped in 1972. The Orange Line relocation in the Southwest Corridor will use the right-of-way taken for this route.
JRTC	Joint Regional Transportation Committee. An advisory committee to the major transportation agencies in the Boston region.
LRV	Light Rail Vehicle. The new vehicles purchased to replace the trolley cars on the Green Line.
MAPC	Metropolitan Area Planning Council. The agency responsible for comprehensive planning in the Boston region.
MBTA	Massachusetts Bay Transportation Authority. The authority responsible for public transportation in the 79 cities and towns which make up the MBTA district.
MDPW	Massachusetts Department of Public Works. The agency responsible for the construction and maintenance of highways in the state.
MPO	Metropolitan Planning Organization. Six regional and state agencies which jointly conduct transportation planning for the Boston metropolitan area.
PA	Public address. A system for communicating with passengers in stations and on trains through loudspeakers.
PCC	A trolley car built to the standard designs and specifications established by the Electric Railway Presidents' Conference Committee during the 1930's and 40's. PCC cars are still in use on the Green Line.
PMT	Program for Mass Transportation. May refer to either the 1966 or 1978 version.

PRC	Project Review Committee, MDPW
"3C"	Comprehensive, Continuing, Cooperative. Describes the transportation process required by federal law.
TIP	Transportation Improvement Program. A federally-required document which includes the short-range highway and transit programs.
TSM	Transportation System Management. An element of the transportation plan which describes plans to improve the effectiveness and efficiency of the highway and transit systems.
T.S. Ref;	Technical Supplemental reference. Used throughout this text to refer to relevant pages in the technical supplement to the PMT, published separately in three volumes.
UMTA	Urban Mass Transportation Administration. Agency responsible for administration of federal transit grant programs.

IV.2 GRAPHICS OF MAJOR PROJECTS

The following figures show the locations of highway projects which cost more than $3,000,000. Major MBTA rapid transit service extensions and the commuter rail system are also shown.

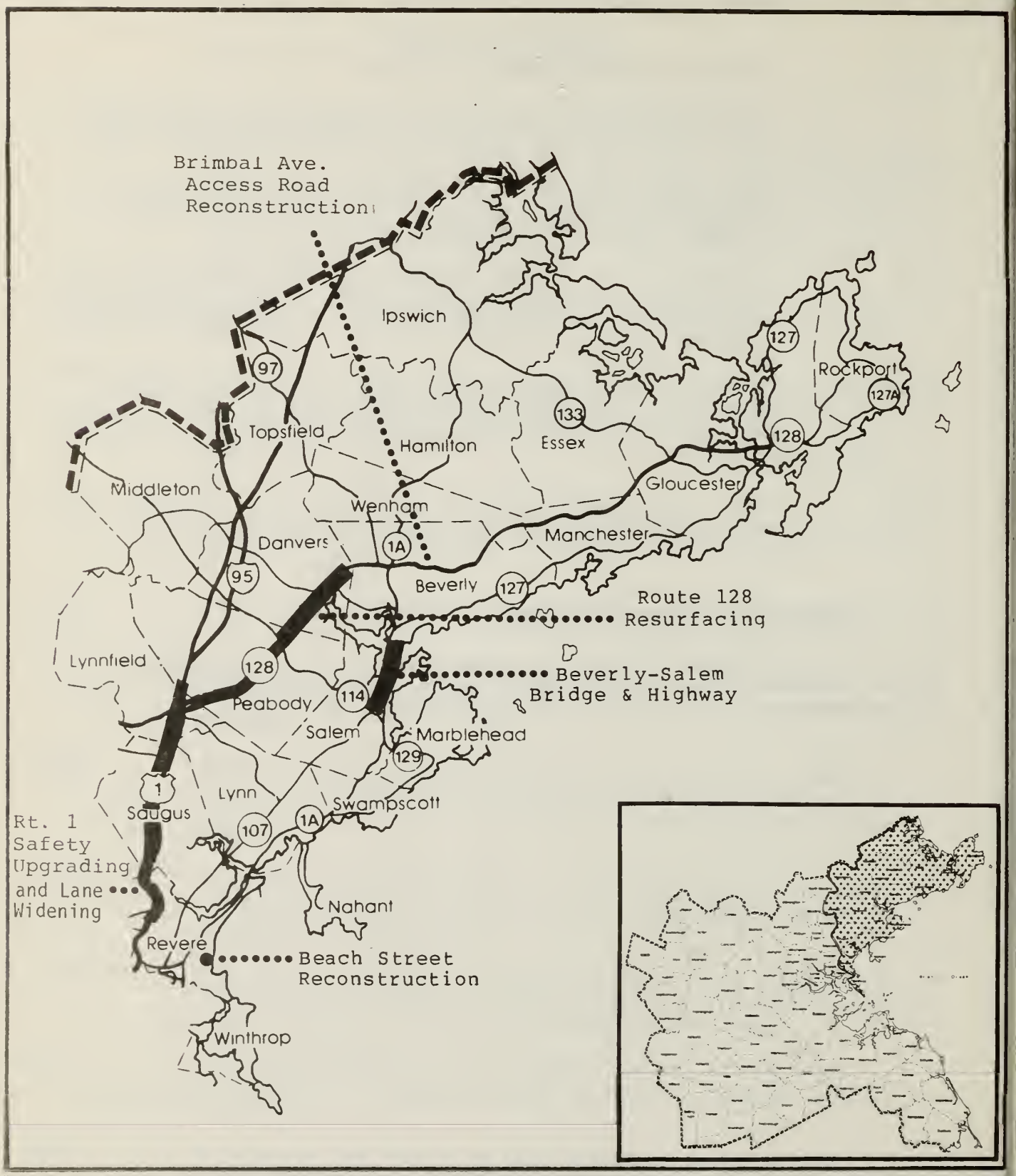
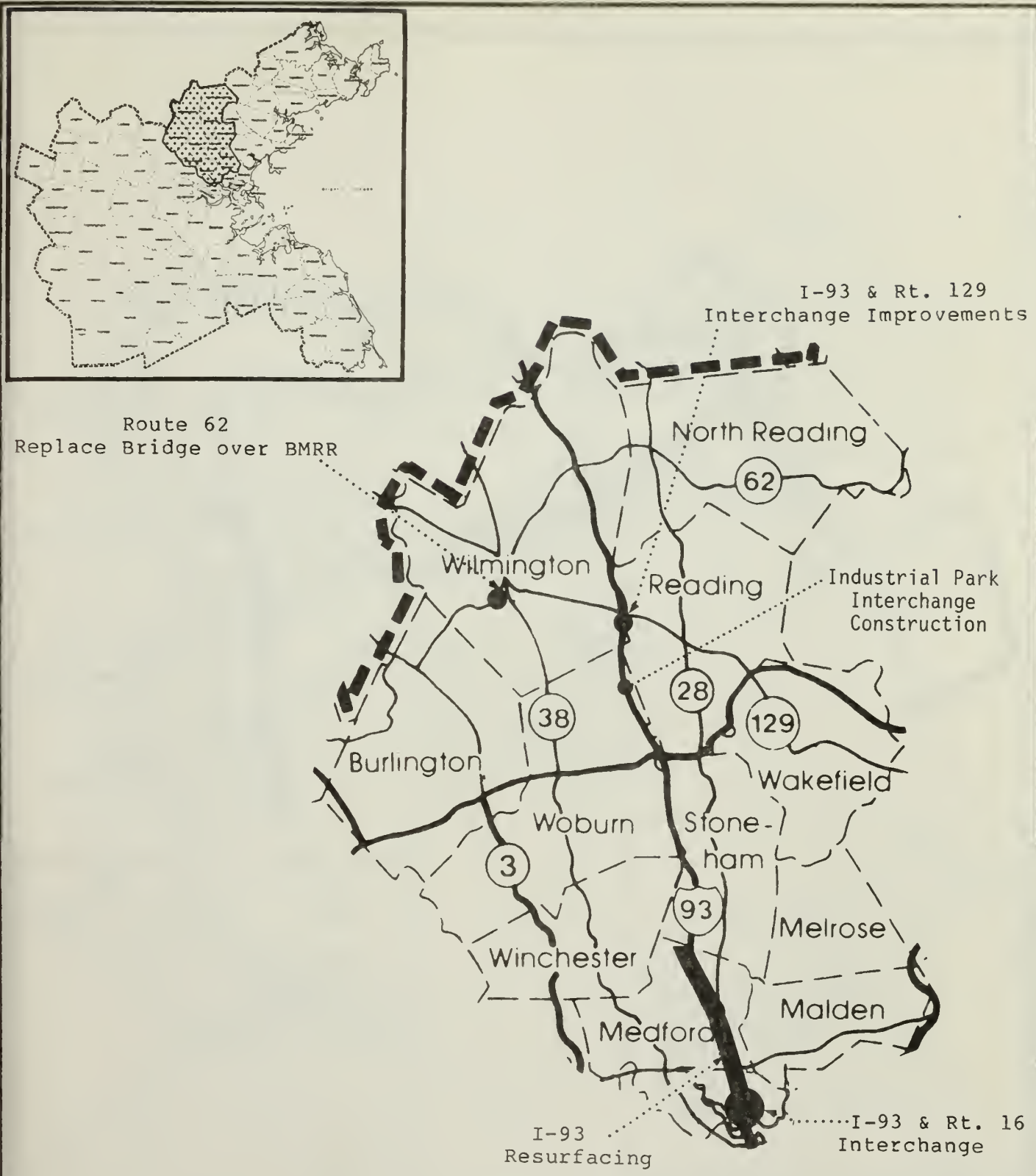

Brimbal Ave.
Access Road
Reconstruction
Ipswich
97
Topsfield
Hamilton
133
Essex
127
Rockport
127A
128
Gloucester
Middleton
Wenham
Danvers
1A
Manchester
95
Beverly
127
Route 128
Resurfacing
Lynnfield
128
Beverly-Salem
Bridge & Highway
Peabody
114
Salem
Marblehead
129
1
Lynn
Saugus
Swampscott
Rt. 1
Safety
Upgrading
and Lane
Widening
107
1A
Nahant
Revere
Beach Street
Reconstruction
Winthrop
MAJOR HIGHWAY IMPROVEMENTS*
95 Interstate
1 U.S. Routes
9 State Routes
MAPC boundary
* Projects over
$3,000,000
October, 1986 MAPC
North Shore

FIGURE 1



MAJOR HIGHWAY IMPROVEMENTS*

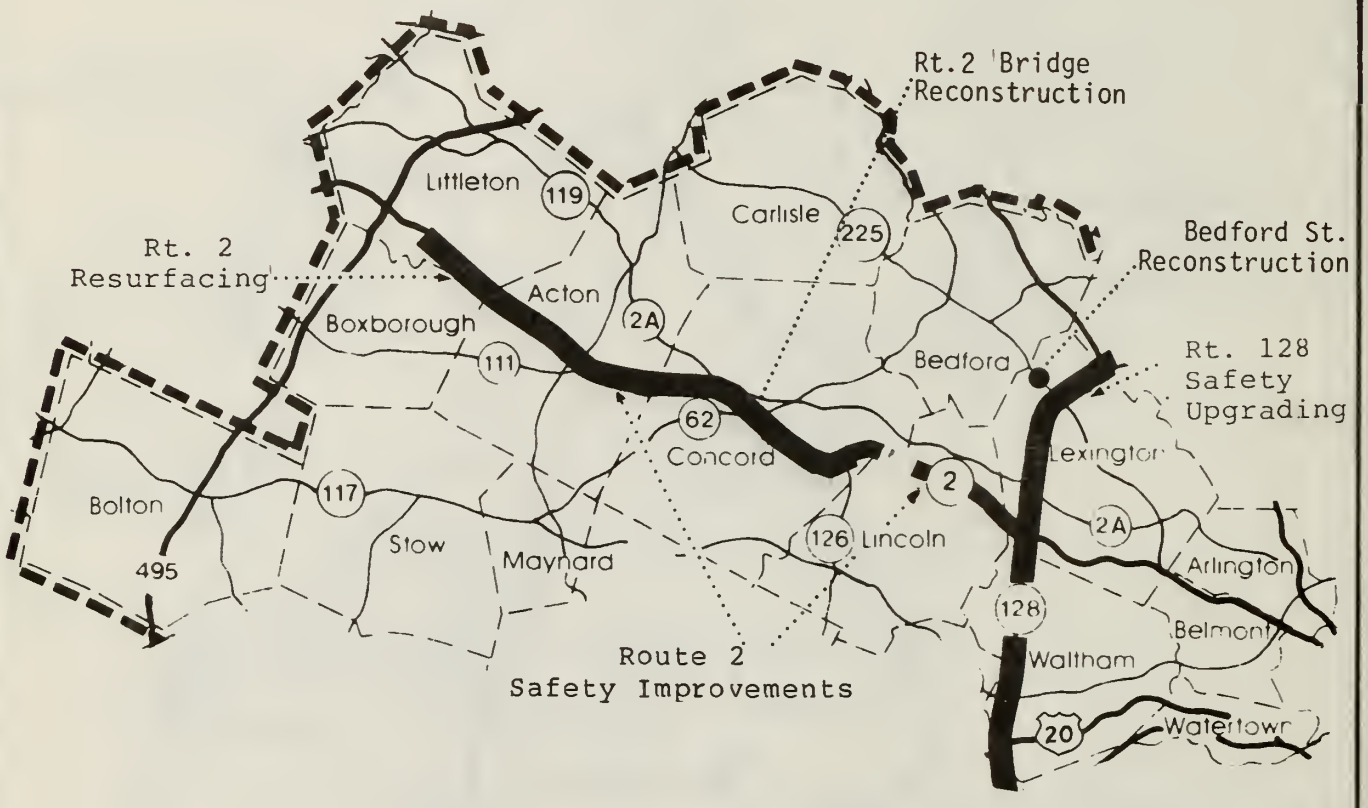
North

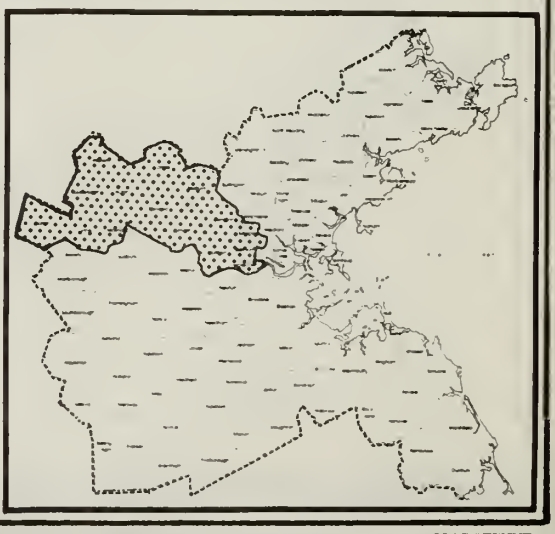
—95— Interstate
—1— U.S. Routes
—(9)— State Routes
- - - - - MAPC boundary

* Projects over $3,000,000

October, 1986 **MAPC**

FIGURE 2





MAJOR HIGHWAY IMPROVEMENTS*

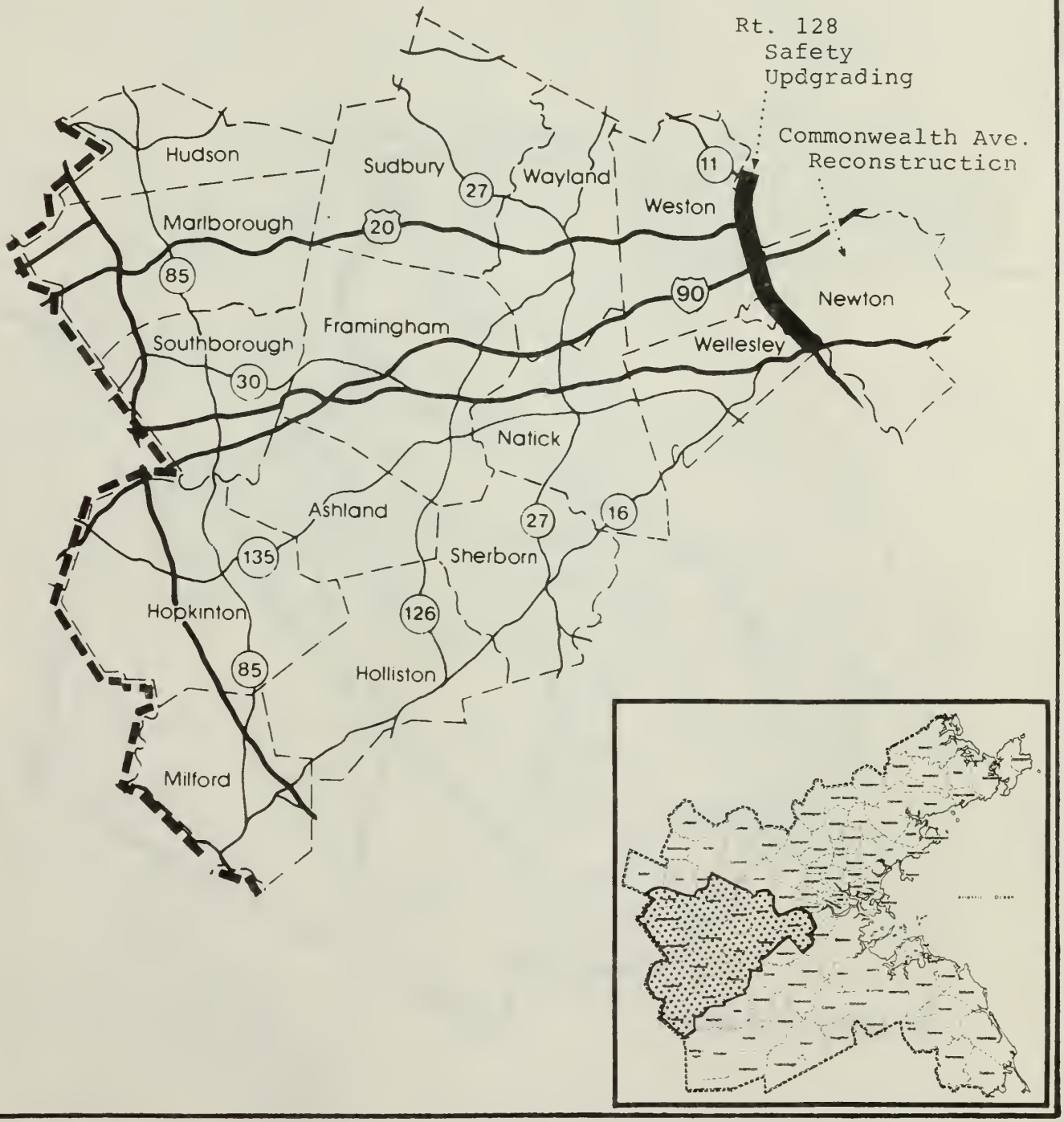
Northwest

—95— Interstate
— 1 — U.S. Routes
— 9 — State Routes
- - - - - MAPC boundary

* Projects over $3,000,000

October, 1986 **MAPC**

FIGURE 3



MAJOR HIGHWAY IMPROVEMENTS*

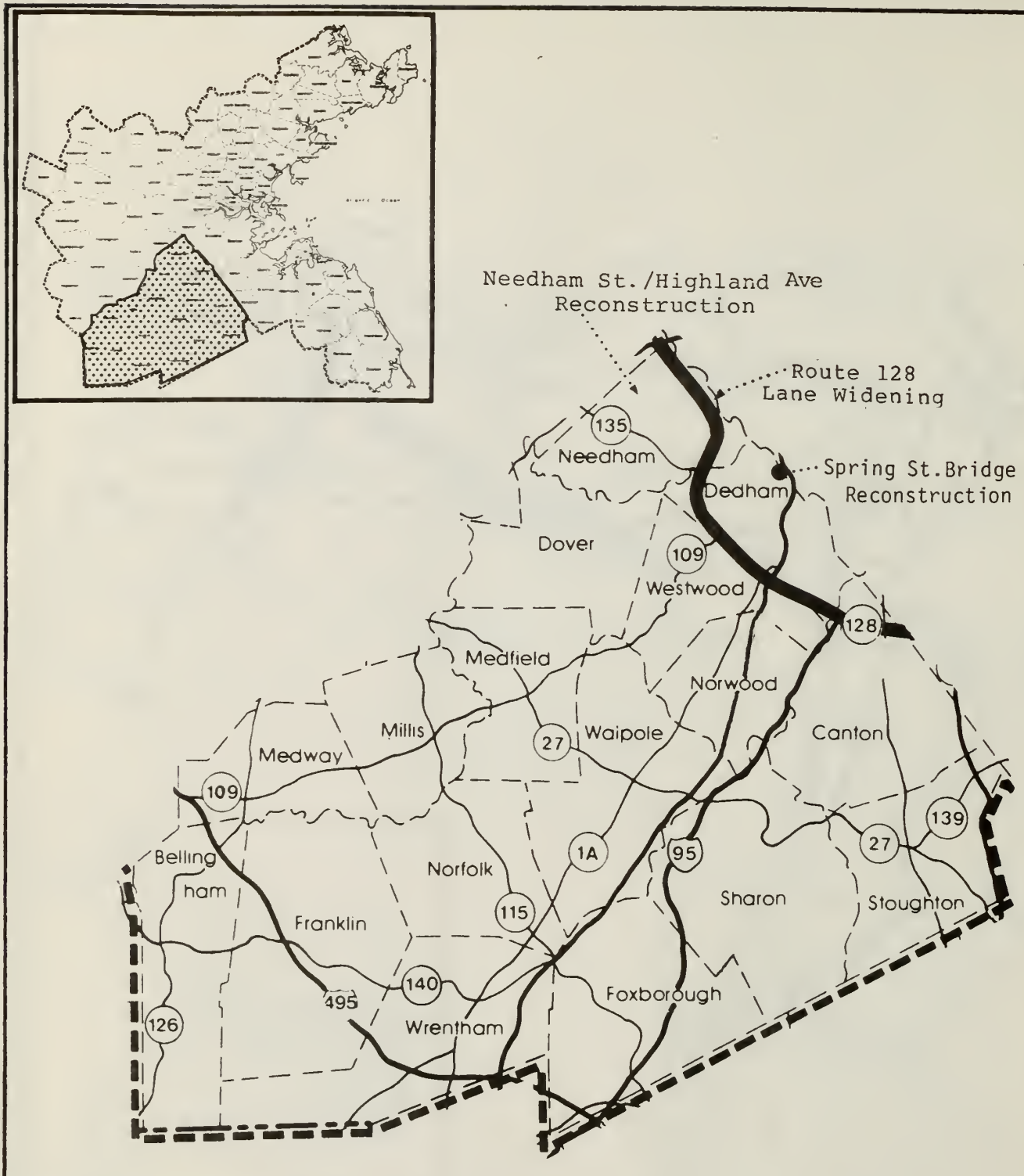
West

—95— Interstate
— 1 — U.S. Routes
—(9)— State Routes
- - - - - MAPC boundary

* Projects over $3,000,000

October, 1986 **MAPC**

FIGURE 4



MAJOR HIGHWAY IMPROVEMENTS*

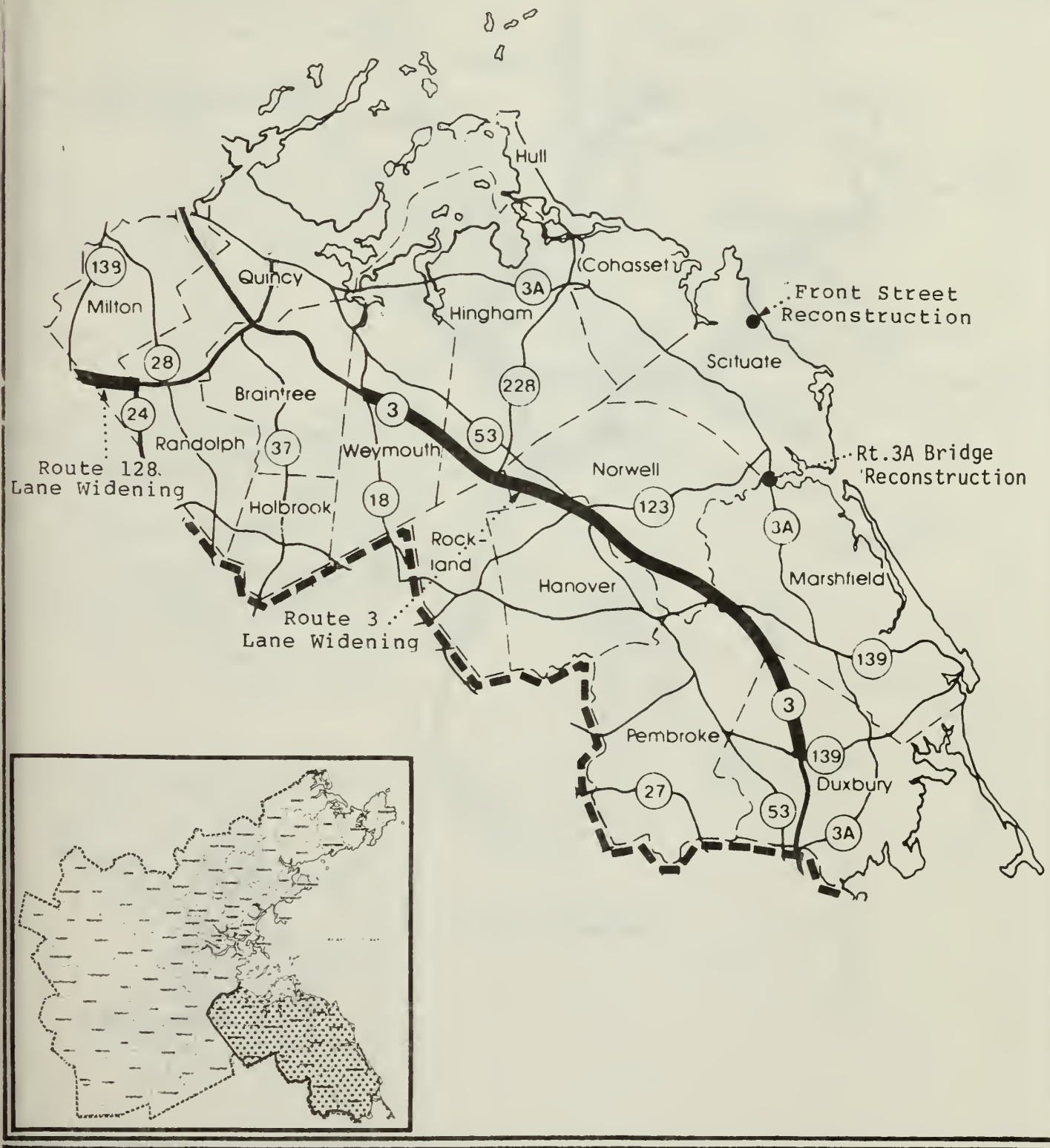
Southwest

—95— Interstate
— 1 — U.S. Routes
— 9 — State Routes
- - - - - MAPC boundary

* Projects over $3,000,000

October, 1986 **MAPC**

FIGURE 5



MAJOR HIGHWAY IMPROVEMENTS*

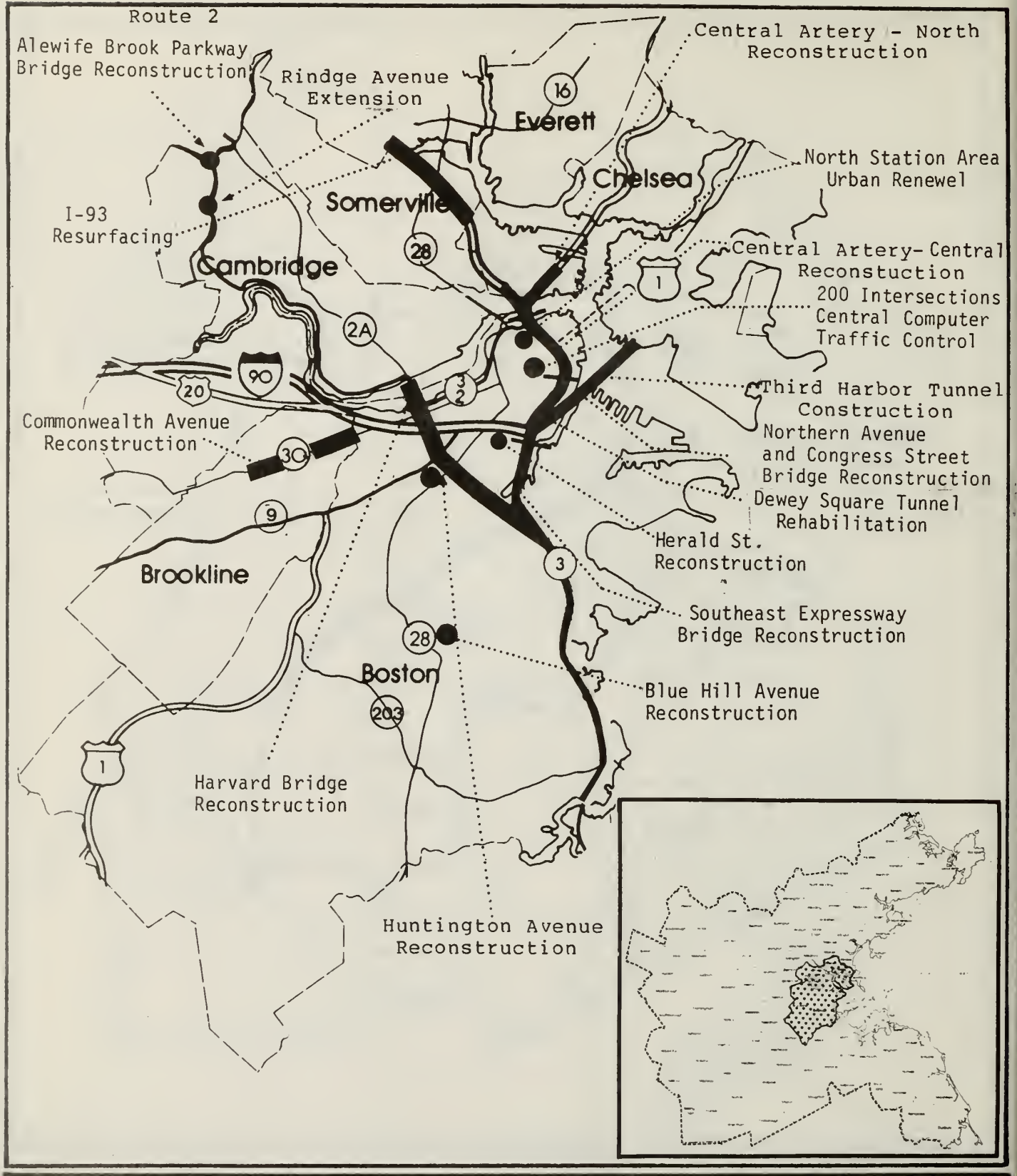
South Shore

—95— Interstate
— 1 — U.S. Routes
—(9)— State Routes
- - - - - MAPC boundary

* Projects over $3,000,000

October, 1986 **MAPC**

FIGURE 6



MAJOR HIGHWAY IMPROVEMENTS*

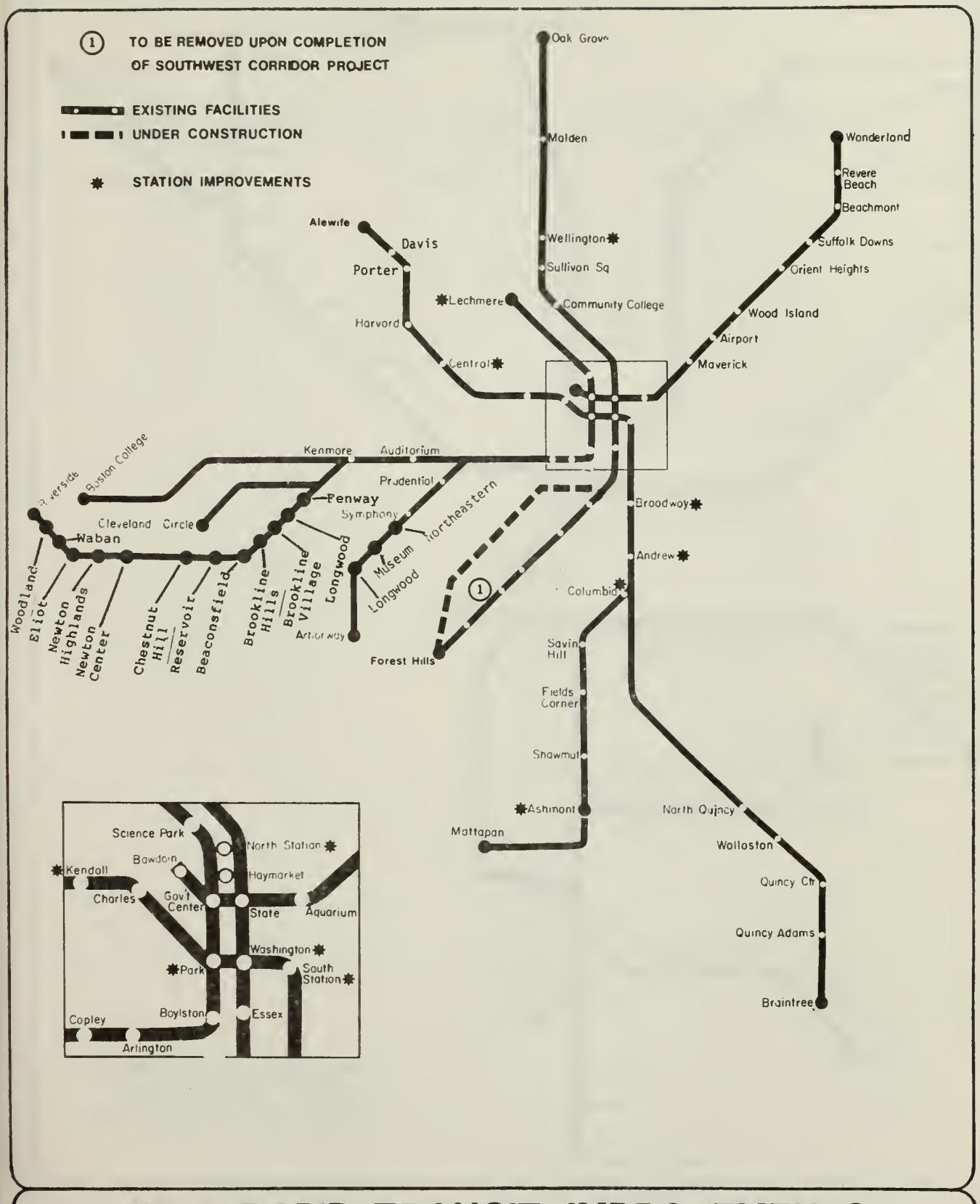
Core

—95— Interstate
— 1 — U.S. Routes
— 9 — State Routes
----- MAPC boundary

* Projects over $3,000,000

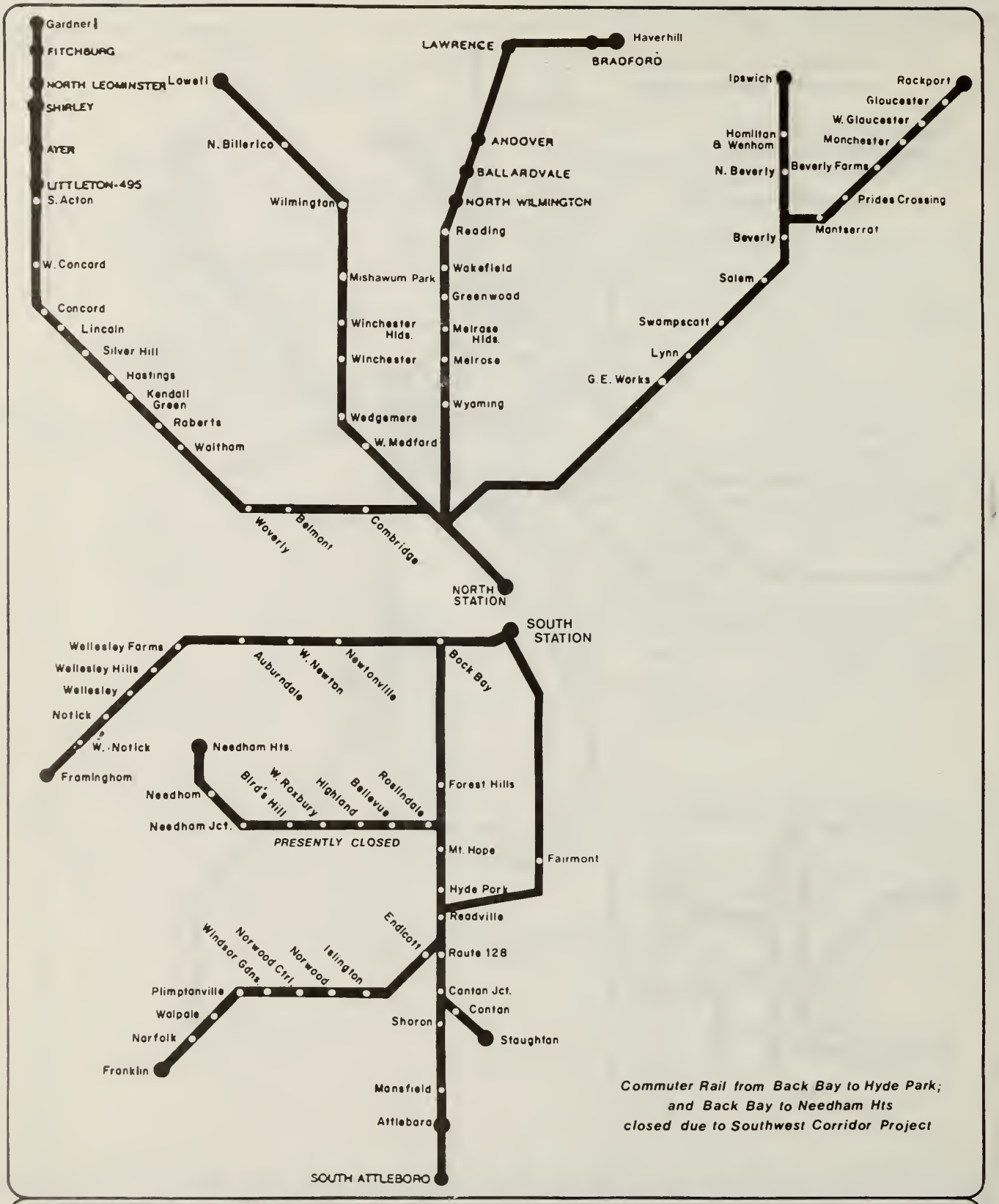
October, 1986 MAPC

FIGURE 7



MBTA RAPID TRANSIT IMPROVEMENTS
Major TIP Service Expansions

FIGURE 8



Commuter Rail from Back Bay to Hyde Park; and Back Bay to Needham Hts closed due to Southwest Corridor Project

1986 Commuter Rail Network

FIGURE 9

IV.3 AIR QUALITY ANALYSIS

The MPO will submit the air-quality analysis of annual element highway projects within 30 days of endorsement of the TIP.

IV.4 Index of Highway Projects By Community

ACTON

CONSOLIDATED PRIMARY			
ACTON	RT 2, ACTON, 02	095900	pg 61
CONCORD	RT-2, CONCORD, 03	096904	pg 61
HAZARD ELIMINATION			
ACTON	RT-111, ACTON, 05	080812	pg 91
HWY BRIDGE REPLACEMENT AND REHAB			
ACTON	RT 27, ACTON, 03	104749	pg 75
ACTON	RT 27, ACTON, 04	104750	pg 75
ACTON	RT-111, ACTION, 04	080811	pg 75
INTERSTATE TRANSFER			
CONCORD	RT 2, CONCORD, 05	096906	pg 94
CONCORD	RT-2, CONCORD, 04	096905	pg 94

ARLINGTON

URBAN SYST BOSTON URBANIZ AREA			
ARLINGTON	ARLINGTON, MASS.AVE., 01	002100	pg 67

ASHLAND

HWY BRIDGE REPLACEMENT AND REHAB			
ASHLAND	HIGH ST., ASHLAND, 01	032140	pg 75
ASHLAND	HOWE ST., ASHLAND, 01	034107	pg 75
ASHLAND	HOWE ST., ASHLAND, 02	034108	pg 75
URBAN SYST BOSTON URBANIZ AREA			
ASHLAND	ASHLAND, 5 LOCATIONS, 01	002400	pg 67

BELLINGHAM

HAZARD ELIMINATION			
BELLINGHAM	RTS.126,140,BELLINGHAM,0	086302	pg 91
INTERSTATE RESURFACING (4R)			
FRANKLIN	RT I495, FRANKLIN, 04	066511	pg 58

BELMONT

HWY BRIDGE REPLACEMENT AND REHAB			
BELMONT	CLARK ST., BELMONT, 02	015296	pg 75
URBAN SYST BOSTON URBANIZ AREA			
BELMONT	BELMONT, 7 INTERSEC., 02	004831	pg 67
BELMONT	BELMONT, 7 LOCATIONS, 01	004830	pg 67

BEVERLY

CONSOLIDATED PRIMARY			
DANVERS	RT 128, DANVERS, 05	087030	pg 61
HWY BRIDGE REPLACEMENT AND REHAB			
SALEM	BEVERLY-SALEM PROJ., 02	005403	pg 86
URBAN SYST BOSTON URBANIZ AREA			
BEVERLY	COMMUN COL RD,BEVERLY,01	016400	pg 67

BOSTON

HWY BRIDGE REPLACEMENT AND REHAB			
BOSTON	ADAMS ST, BOSTON, 01	000600	pg 76
BOSTON	BELLEVUE ST, BOSTON, 01	004805	pg 76

BOSTON	BROADWAY, BOSTON, 01	008240	pg 76
BOSTON	CHELSEA ST.BOSTON, 03	014002	pg 76
BOSTON	COLUMBUS AVE, BOSTON, 01	015880	pg 76
BOSTON	CONGRESS ST., BOSTON, 01	016555	pg 76
BOSTON	CUMMINS HWY, BOSTON, 03	017903	pg 77
BOSTON	DANA AVE, BOSTON, 01	018400	pg 77
BOSTON	FITZGERALD,XWY,BOSTON,01	025651	pg 77
BOSTON	GARDNER ST, BOSTON, 01	027750	pg 77
BOSTON	HARVARD BR, BOSTON, 01	031100	pg 77
BOSTON	HYDE PARK AV, BOSTON, 01	034880	pg 77
BOSTON	N.WASHINGTN ST,BOSTON,01	049905	pg 78
BOSTON	NORTHERN AVE, BOSTON, 01	053000	pg 78
BOSTON	SARATOGA ST, BOSTON, 02	127401	pg 78
BOSTON	SILVER ST, BOSTON, 01	129320	pg 78
BOSTON	SUMMER ST, BOSTON, 02	132701	pg 78
BOSTON	SUMMER ST, BOSTON, 03	132702	pg 78
BOSTON	SUMMER ST, BOSTON, 04	132703	pg 79
BOSTON	SUMMER ST, BOSTON, 05	132704	pg 79
BOSTON	SUMNER ST, BOSTON, 01	132700	pg 79
BOSTON	WEST FIFTH ST, BOSTON,01	140300	pg 79
BOSTON	WEST FOURTH ST,BOSTON,02	140401	pg 79
BOSTON	WEST SIXTH ST, BOSTON,01	140700	pg 79
DEDHAM	SPRING ST., DEDHAM, 01	030835	pg 81
INTERSTATE			
BOSTON	CENT ARTERY CENT, 01	011700	pg 56
BOSTON	CENT.ARTERY NORTH, 02	011802	pg 56
BOSTON	CENT.ARTERY NORTH, 03	011803	pg 56
BOSTON	CENT.ARTERY NORTH, 04	011804	pg 56
BOSTON	CENT.ARTERY NORTH, 05	011805	pg 56
BOSTON	CENT.ARTERY NORTH, 06	011806	pg 56
BOSTON	CENT.ARTERY NORTH, 07	011807	pg 56
BOSTON	THIRD HARBOR TUNNEL, 01	133905	pg 57
INTERSTATE RESURFACING (4R)			
BOSTON	DEWEY SQ TUNNEL, 01	019600	pg 58
BOSTON	DORCHESTER AVE,BOSTON,04	020703	pg 58
BOSTON	SAVIN HILL, BOSTON, 01	127520	pg 58
INTERSTATE TRANSFER			
BOSTON	BLUE HILL AVE, BOSTON,02	006001	pg 93
BOSTON	COMMONWEALTH AV,BOSTN,02	016200	pg 93
BOSTON	HERALD ST., BOSTON, 01	032008	pg 93
BOSTON	HUNTINGTON AVE,BOSTON,03	034700	pg 93
BOSTON	N. STATION, URB RENEW,PH	052170	pg 93
BOSTON	N.STATION,URB REN PHSEII	052171	pg 93
BOSTON	TRF CNTR SYS 4 BOSTON,04	134223	pg 94
URBAN SYST BOSTON URBANIZ AREA			
BOSTON	WASHINGTON ST, BOSTON,01	138500	pg 67
URBAN SYSTEMS CITY OF BOSTON			
BOSTON	BOSTON PEDEST SIGNALS,01	006800	pg 65
BOSTON	COLUMBIA RD, BOSTON, 05	015851	pg 65
BOSTON	MASS. AVE., BOSTON, 00	043801	pg 65
BOSTON	MASS. AVE., BOSTON, 00	043803	pg 65
BOSTON	NEW DUDLEY ST, BOSTON,01	021300	pg 65

	BOSTON	NRTHRN.AVE CONNECT.RDS,0	053001	pg 65
	BOSTON	PIER ACCESS RD.,BOSTON,1	056207	pg 66
BOXBOROUGH				
	CONSOLIDATED PRIMARY			
	CONCORD	RT-2, CONCORD, 03	096904	pg 61
BRAINTREE				
	HAZARD ELIMINATION			
	BRAINTREE	ELM ST., BRAINTREE, 01	024005	pg 91
	HWY BRIDGE REPLACEMENT AND REHAB			
	BRAINTREE	PLAIN ST, BRAINTREE, 01	056400	pg 79
	INTERSTATE TRANSFER			
	WEYMOUTH	WEYMOUTH LANDING, 01	142120	pg 96
	URBAN SYST BOSTON URBANIZ AREA			
	BRAINTREE	5 CORS, BRAINTREE, 01	144400	pg 68
BROOKLINE				
	URBAN SYST BOSTON URBANIZ AREA			
	BROOKLINE	STA SIG UPD, DIST.4, 01	131365	pg 68
BURLINGTON				
	HAZARD ELIMINATION			
	BURLINGTON	RT.3A, BURLINGTON, 01	086907	pg 91
	INTERSTATE RESURFACING (4R)			
	WESTON	RT 128, WESTON, 01	088900	pg 60
CAMBRIDGE				
	HWY BRIDGE REPLACEMENT AND REHAB			
	BOSTON	HARVARD BR, BOSTON, 01	031100	pg 77
	CAMBRIDGE	RT 2, CAMBRIDGE, 02	096600	pg 80
	INTERSTATE TRANSFER			
	CAMBRIDGE	LECHMERE,PHASE IV,CAMBR,	037823	pg 94
	CAMBRIDGE	RINDGE AVE.EXT,CAMBRIDGE	060480	pg 94
	URBAN SYST BOSTON URBANIZ AREA			
	CAMBRIDGE	HARVARD SQ, CAMBRIDGE,01	031140	pg 68
CANTON				
	HWY BRIDGE REPLACEMENT AND REHAB			
	CANTON	CHAPMAN ST, CANTON, 01	013500	pg 80
	CANTON	HIGH ST., CANTON, 01	032209	pg 80
	CANTON	RT 138, CANTON, 03	090460	pg 80
	CANTON	SPAULDING ST, CANTON, 01	130555	pg 80
	INTERSTATE RESURFACING (4R)			
	CANTON	RT 128, CANTON, 02	086920	pg 58
	RANDOLPH	RT 128, RANDOLPH, 01	087800	pg 59
	URBAN SYST BOSTON URBANIZ AREA			
	CANTON	WASHINGTON ST, CANTON,01	138650	pg 68
CHELSEA				
	HWY BRIDGE REPLACEMENT AND REHAB			
	BOSTON	CHELSEA ST.BOSTON, 03	014002	pg 76

CHELSEA	BELLINGHAM ST,CHELSEA,01	004810	pg 80
CHELSEA	BROADWAY, CHELSEA, 01	008250	pg 80
CONCORD			
CONSOLIDATED PRIMARY			
ACTON	RT 2, ACTON, 02	095900	pg 61
CONCORD	RT-2, CONCORD, 03	096904	pg 61
HWY BRIDGE REPLACEMENT AND REHAB			
CONCORD	RT 2, CONCORD, 01	096900	pg 81
CONCORD	RT 2, CONCORD, 02	096903	pg 81
INTERSTATE TRANSFER			
CONCORD	RT 2, CONCORD, 05	096906	pg 94
CONCORD	RT-2, CONCORD, 04	096905	pg 94
DANVERS			
CONSOLIDATED PRIMARY			
DANVERS	RT 128, DANVERS, 04	087020	pg 61
DANVERS	RT 128, DANVERS, 05	087030	pg 61
URBAN SYST BOSTON URBANIZ AREA			
DANVERS	HIGH ST, DANVERS, 01	032215	pg 68
DEDHAM			
HWY BRIDGE REPLACEMENT AND REHAB			
DEDHAM	SPRING ST., DEDHAM, 01	030835	pg 81
INTERSTATE RESURFACING (4R)			
CANTON	RT 128, CANTON, 02	086920	pg 58
URBAN SYST BOSTON URBANIZ AREA			
BOSTON	WASHINGTON ST, BOSTON,01	138500	pg 67
DUXBURY			
CONSOLIDATED PRIMARY			
WEYMOUTH	RT-3, WEYMOUTH, 03	109101	pg 62
EVERETT			
URBAN SYST BOSTON URBANIZ AREA			
EVERETT	MAIN ST, EVERETT, 01	041810	pg 68
FOXBOROUGH			
INTERSTATE RESURFACING (4R)			
FRANKLIN	RT I495, FRANKLIN, 04	066511	pg 58
FRAMINGHAM			
CONSOLIDATED PRIMARY			
FRAMINGHAM	RT 30, FRAMINGHAM, 03	110951	pg 61
HWY BRIDGE REPLACEMENT AND REHAB			
FRAMINGHAM	BOSTON RD, FRAMINGHAM,01	006850	pg 81
URBAN SYST BOSTON URBANIZ AREA			
BROOKLINE	STA SIG UPD, DIST.4, 01	131365	pg 68
FRAMINGHAM	RT 126, FRAMINGHAM, 01	086450	pg 69
FRANKLIN			
HWY BRIDGE REPLACEMENT AND REHAB			

FRANKLIN	RT 140, FRANKLIN, 02	092000	pg 81
INTERSTATE RESURFACING (4R)			
FRANKLIN	RT I495, FRANKLIN, 04	066511	pg 58
GLOUCESTER			
HWY BRIDGE REPLACEMENT AND REHAB			
GLOUCESTER	CENTENNIAL ST,GLOUCHESTE	011650	pg 81
UNDETERMINED			
GLOUCESTER	GLOUCESTER AV BR, 01	028310	pg 97
HAMILTON			
HWY BRIDGE REPLACEMENT AND REHAB			
HAMILTON	CUTLER RD, HAMILTON, 01	018115	pg 81
HANOVER			
CONSOLIDATED PRIMARY			
WEYMOUTH	RT-3, WEYMOUTH, 03	109101	pg 62
HAZARD ELIMINATION			
HANOVER	RT 53, HANOVER, 04	114800	pg 91
HWY BRIDGE REPLACEMENT AND REHAB			
HANOVER	RT 53, HANOVER, 01	114500	pg 82
HARVARD			
CONSOLIDATED PRIMARY			
CONCORD	RT-2, CONCORD, 03	096904	pg 61
HINGHAM			
CONSOLIDATED PRIMARY			
WEYMOUTH	RT-3, WEYMOUTH, 03	109101	pg 62
HOPKINTON			
HAZARD ELIMINATION			
HOPKINTON	MAIN ST.HOPKINTON, 01	041940	pg 91
LEXINGTON			
INTERSTATE RESURFACING (4R)			
WESTON	RT 128, WESTON, 01	088900	pg 60
INTERSTATE TRANSFER			
LINCOLN	RT 2, LINCOLN, 01	097500	pg 94
URBAN SYST BOSTON URBANIZ AREA			
LEXINGTON	BEDFORD ST, LEXINGTON,01	004550	pg 69
LEXINGTON	HARTWELL AVE,LEXINGTON,0	031050	pg 69
LEXINGTON	MARRETT RD, LEXINGTON,01	043550	pg 69
LINCOLN			
INTERSTATE TRANSFER			
LINCOLN	RT 2, LINCOLN, 01	097500	pg 94
LINCOLN	RT-2, LINCOLN, 02	097501	pg 95
LITTLETON			
CONSOLIDATED PRIMARY			
CONCORD	RT-2, CONCORD, 03	096904	pg 61

	HWY BRIDGE REPLACEMENT AND REHAB			
	LITTLETON	GREAT RD, LITTLETON, 01	029225	pg 82
LYNN				
	HWY BRIDGE REPLACEMENT AND REHAB			
	LYNN	CHESTNUT ST, LYNN, 01	014203	pg 82
	LYNN	FAYETTE ST, LYNN, 01	025103	pg 82
	LYNN	GREEN ST, LYNN, 01	029560	pg 82
	URBAN SYST BOSTON URBANIZ AREA			
	LYNN	WASH.+BROAD STS.,LYNN,01	138060	pg 69
LYNNFIELD				
	CONSOLIDATED PRIMARY			
	REVERE	RT 1, REVERE, 01	076300	pg 62
MALDEN				
	CONSOLIDATED PRIMARY			
	REVERE	RT 1, REVERE, 01	076300	pg 62
	REVERE	RT 60, REVERE, 03	118150	pg 62
	HWY BRIDGE REPLACEMENT AND REHAB			
	MALDEN	CLIFTON ST, MALDEN, 01	015430	pg 82
	MALDEN	MOUNTAIN AV, MALDEN, 01	048720	pg 83
	URBAN SYST BOSTON URBANIZ AREA			
	MALDEN	EASTERN AVE, MALDEN, 02	023130	pg 69
	MALDEN	EASTRN/BROADWAY,MALDEN,1	023125	pg 69
	MALDEN	PLEASANT ST MALL, MALDEN	056650	pg 70
MARLBOROUGH				
	INTERSTATE RESURFACING (4R)			
	MARLBOROUGH	RT I290, MARLBOROUGH, 02	063601	pg 58
	URBAN SYST BOSTON URBANIZ AREA			
	MARLBOROUGH	BOUNDARY ST, MARLBORO,01	006870	pg 70
	MARLBOROUGH	FELTON ST, MARLBORO, 01	025102	pg 70
	MARLBOROUGH	MARLBORO PKNG GAR, 01	043505	pg 70
MARSHFIELD				
	CONSOLIDATED PRIMARY			
	WEYMOUTH	RT-3, WEYMOUTH, 03	109101	pg 62
	HWY BRIDGE REPLACEMENT AND REHAB			
	MARSHFIELD	RT 3A, MARSHFIELD, 01	110200	pg 83
MEDFORD				
	HWY BRIDGE REPLACEMENT AND REHAB			
	MEDFORD	COLLEGE AVE., MEDFORD,01	015555	pg 83
	MEDFORD	GROVE ST, MEDFORD, 01	030100	pg 83
	MEDFORD	NORTH ST, MEDFORD, 01	052300	pg 83
	MEDFORD	RT 38, MEDFORD, 01	112200	pg 83
	INTERSTATE RESURFACING (4R)			
	MEDFORD	RT I93, MEDFORD, 01	071500	pg 59
	MEDFORD	RT-I-93, MEDFORD, 05	071707	pg 59
	INTERSTATE TRANSFER			
	MEDFORD	RT 16, MEDFORD, 02	094600	pg 95

MEDWAY
CONSOLIDATED PRIMARY
MEDWAY RT-109, MEDWAY, 01 079800 pg 61
INTERSTATE RESURFACING (4R)
FRANKLIN RT I495, FRANKLIN, 04 066511 pg 58

MIDDLETON
URBAN SYST BOSTON URBANIZ AREA
MIDDLETON RT 114, MIDDLETON, 02 081781 pg 70

MILFORD
CONSOLIDATED PRIMARY
MILFORD RT 109, MILFORD, 02 079801 pg 62
INTERSTATE RESURFACING (4R)
FRANKLIN RT I495, FRANKLIN, 04 066511 pg 58

MILLIS
CONSOLIDATED PRIMARY
MEDWAY RT-109, MEDWAY, 01 079800 pg 61
HWY BRIDGE REPLACEMENT AND REHAB
MILLIS PLAIN ST, MILLIS, 01 056560 pg 84
RURAL SECONDARY
MILLIS MILLIS, 7 LOCATIONS, 01 047501 pg 64

MILTON
HWY BRIDGE REPLACEMENT AND REHAB
BOSTON ADAMS ST, BOSTON, 01 000600 pg 76
INTERSTATE RESURFACING (4R)
RANDOLPH RT 128, RANDOLPH, 01 087800 pg 59
URBAN SYST BOSTON URBANIZ AREA
MILTON MILTON, 13 LOCATIONS, 01 047600 pg 70

NATICK
HWY BRIDGE REPLACEMENT AND REHAB
NATICK BODEN LANE, NATICK, 01 006251 pg 84
NATICK LOKER ST, NATICK, 01 039360 pg 84
NATICK MARION ST, NATICK, 01 043440 pg 84
NATICK NORTH MAIN ST.,NATICK,01 052160 pg 84
NATICK WALNUT ST., NATICK, 01 137315 pg 84
NATICK WASHINGTON ST, NATICK,01 139180 pg 84
URBAN SYST BOSTON URBANIZ AREA
NATICK RT-135,3 LOCS.,NATICK,03 090101 pg 70

NEEDHAM
HWY BRIDGE REPLACEMENT AND REHAB
NEEDHAM HIGH ROCK ST, NEEDHAM,01 032451 pg 85
INTERSTATE RESURFACING (4R)
CANTON RT 128, CANTON, 02 086920 pg 58
URBAN SYST BOSTON URBANIZ AREA
NEEDHAM HIGHLAND AV CORRIDOR, 01 032670 pg 71

NEWTON
HWY BRIDGE REPLACEMENT AND REHAB
NEWTON HAMMOND ST, NEWTON, 01 030500 pg 85
INTERSTATE TRANSFER
NEWTON COMMONWEALTH AV,NEWTON,0 016250 pg 95
NEWTON COMMONWEALTH AV,NEWTON,2 016251 pg 95
NEWTON COMMONWEALTH AV,NEWTON,3 016252 pg 95
URBAN SYST BOSTON URBANIZ AREA
BROOKLINE STA SIG UPD, DIST.4, 01 131365 pg 68
NEEDHAM HIGHLAND AV CORRIDOR, 01 032670 pg 71
NEWTON LANGLEY RD, NEWTON, 01 037460 pg 71

NORFOLK
HWY BRIDGE REPLACEMENT AND REHAB
NORFOLK MAIN ST, NORFOLK, 01 042100 pg 85

NORTH READING
URBAN SYST BOSTON URBANIZ AREA
NORTH READING RT 28, NORTH READING, 01 107000 pg 71

NORTHBOROUGH
URBAN SYST BOSTON URBANIZ AREA
MARLBOROUGH BOUNDARY ST, MARLBORO,01 006870 pg 70

NORWELL
CONSOLIDATED PRIMARY
WEYMOUTH RT-3, WEYMOUTH, 03 109101 pg 62

NORWOOD
INTERSTATE TRANSFER
NORWOOD UNIVERSITY AV,NORWOOD,02 135601 pg 95
URBAN SYST BOSTON URBANIZ AREA
NORWOOD UNIVERSITY AV,NORWOOD,03 135602 pg 71

PEABODY
CONSOLIDATED PRIMARY
DANVERS RT 128, DANVERS, 04 087020 pg 61
PEABODY LOWELL ST, PEABODY, 01 040540 pg 62
URBAN SYST BOSTON URBANIZ AREA
PEABODY PEABODY, CBD STS, 02 056056 pg 71

PEMBROKE
CONSOLIDATED PRIMARY
WEYMOUTH RT-3, WEYMOUTH, 03 109101 pg 62
HWY BRIDGE REPLACEMENT AND REHAB
HANOVER RT 53, HANOVER, 01 114500 pg 82

PLAINVILLE
INTERSTATE RESURFACING (4R)
FRANKLIN RT I495, FRANKLIN, 04 066511 pg 58

QUINCY
INTERSTATE RESURFACING (4R)
QUINCY BATES AVE, QUINCY, 01 003967 pg 59
QUINCY FURNANCE BRK, QUINCY, 01 027550 pg 59
RANDOLPH RT 128, RANDOLPH, 01 087800 pg 59
URBAN SYST BOSTON URBANIZ AREA
QUINCY RT 37, QUINCY, 01 112150 pg 71

RANDOLPH
INTERSTATE RESURFACING (4R)
RANDOLPH RT 128, RANDOLPH, 01 087800 pg 59
URBAN SYST BOSTON URBANIZ AREA
RANDOLPH RANDOLPH, 7 LOCATIONS,01 059800 pg 72

READING
HAZARD ELIMINATION
READING RT 28, READING, 02 107311 pg 92
INTERSTATE RESURFACING (4R)
READING I-93, READING, 03 071802 pg 59
WILMINGTON RT 129, WILMINGTON, 01 089200 pg 60
URBAN SYST BOSTON URBANIZ AREA
WILMINGTON RT-129, WILMINGTON, 02 089201 pg 73

REVERE
CONSOLIDATED PRIMARY
REVERE RT 1, REVERE, 01 076300 pg 62
REVERE RT 60, REVERE, 03 118150 pg 62
HWY BRIDGE REPLACEMENT AND REHAB
REVERE RAILROAD AVE, REVERE, 01 059720 pg 85
REVERE RT 1A, REVERE, 02 077700 pg 85
REVERE RT 60, REVERE, 01 118000 pg 85
URBAN SYST BOSTON URBANIZ AREA
REVERE BEACH ST., REVERE, 01 025105 pg 72

ROCKLAND
CONSOLIDATED PRIMARY
WEYMOUTH RT-3, WEYMOUTH, 03 109101 pg 62

SALEM
HWY BRIDGE REPLACEMENT AND REHAB
SALEM BEVERLY-SALEM PROJ., 01 005402 pg 85
SALEM BEVERLY-SALEM PROJ., 02 005403 pg 86
SALEM BEVERLY-SALEM PROJ., 03 005404 pg 86
SALEM BEVERLY-SALEM PROJ., 04 005405 pg 86

SAUGUS
CONSOLIDATED PRIMARY
REVERE RT 1, REVERE, 01 076300 pg 62
HWY BRIDGE REPLACEMENT AND REHAB
SAUGUS ESSEX ST, SAUGUS, 01 024700 pg 86
SAUGUS RT 107, SAUGUS, 01 079505 pg 86
URBAN SYST BOSTON URBANIZ AREA

SAUGUS	WALNUT + MAIN STS.,SAUGU	024710	pg 72
SCITUATE			
HWY BRIDGE REPLACEMENT AND REHAB			
MARSHFIELD	RT 3A, MARSHFIELD, 01	110200	pg 83
SCITUATE	ED.FOSTER RD,SCITUATE,01	023399	pg 86
INTERSTATE TRANSFER			
SCITUATE	FRONT ST, SCITUATE, 01	027450	pg 95
SOMERVILLE			
HWY BRIDGE REPLACEMENT AND REHAB			
SOMERVILLE	BEACON ST, SOMERVL, 01	004350	pg 86
SOMERVILLE	CEDAR ST, SOMERVILLE, 01	011600	pg 87
SOMERVILLE	DANE ST, SOMMERVILLE, 01	018449	pg 87
SOMERVILLE	LOWELL ST, SOMERVILLE,01	040550	pg 87
SOMERVILLE	SCHOOL ST, SOMERVILLE,01	127900	pg 87
SOMERVILLE	WALNUT ST, SOMERVILLE,01	137349	pg 87
INTERSTATE RESURFACING (4R)			
MEDFORD	RT-I-93, MEDFORD, 05	071707	pg 59
INTERSTATE TRANSFER			
SOMERVILLE	HIGHLAND AVE,SOMERVILLE,	032655	pg 96
SOUTHBOROUGH			
HWY BRIDGE REPLACEMENT AND REHAB			
SOUTHBOROUGH	RT 85, SOUTHBOROUGH, 01	123330	pg 87
SOUTHBOROUGH	RT-85, SOUTHBORO, 02	123331	pg 87
STONEHAM			
URBAN SYST BOSTON URBANIZ AREA			
STONEHAM	MONTVALE AVE,STONEHAM,01	048290	pg 72
STOUGHTON			
HAZARD ELIMINATION			
STOUGHTON	RT 138,STOUGHTON,01	091000	pg 92
SUDBURY			
CONSOLIDATED PRIMARY			
SUDBURY	RT 20, SUDBURY, 01	100800	pg 62
HWY BRIDGE REPLACEMENT AND REHAB			
WAYLAND	SHERMAN BRDGE RD,WAYLAND	129110	pg 88
SWAMPSCOTT			
HWY BRIDGE REPLACEMENT AND REHAB			
SWAMPSCOTT	DANVERS RD,SWAMPSCOTT,01	018700	pg 88
SWAMPSCOTT	ESSEX ST, SWAMPSCOTT, 01	024800	pg 88
WAKEFIELD			
URBAN SYST BOSTON URBANIZ AREA			
WAKEFIELD	MAIN ST, WAKEFIELD, 03	042410	pg 72
WALPOLE			
HWY BRIDGE REPLACEMENT AND REHAB			

	WALPOLE	KENDALL ST, WALPOLE, 01	036150	pg 88
	WALPOLE	WEST ST, WALPOLE, 01	141058	pg 88
	WALPOLE	WEST ST, WALPOLE, 02	141059	pg 88
URBAN SYST BOSTON URBANIZ AREA				
	WALPOLE	MAIN ST, WALPOLE, 01	042450	pg 72
	WALPOLE	WALPOLE, 3 LOCATIONS, 01	137400	pg 72
WALTHAM				
INTERSTATE RESURFACING (4R)				
	WESTON	RT 128, WESTON, 01	088900	pg 60
URBAN SYST BOSTON URBANIZ AREA				
	WALTHAM	RT-20, WALTHAM, 04	101202	pg 73
WATERTOWN				
URBAN SYST BOSTON URBANIZ AREA				
	WATERTOWN	NO.BEACON + WATERTOWN ST	049610	pg 73
WAYLAND				
HWY BRIDGE REPLACEMENT AND REHAB				
	WAYLAND	SHERMAN BRDGE RD,WAYLAND	129110	pg 88
URBAN SYST BOSTON URBANIZ AREA				
	WAYLAND	RT 27, WAYLAND, 01	105120	pg 73
WELLESLEY				
HWY BRIDGE REPLACEMENT AND REHAB				
	WELLESLEY	KINGSBRY ST,WELLESLEY,01	036500	pg 88
	WELLESLEY	ROUTE 9, WELLESLEY, 03	125299	pg 89
	WELLESLEY	WESTON RD.WELLESLEY, 01	141630	pg 89
INTERSTATE RESURFACING (4R)				
	CANTON	RT 128, CANTON, 02	086920	pg 58
WESTON				
HWY BRIDGE REPLACEMENT AND REHAB				
	WESTON	SOUTH ST, WESTON, 01	130375	pg 89
INTERSTATE RESURFACING (4R)				
	WESTON	RT 128, WESTON, 01	088900	pg 60
WESTWOOD				
HWY BRIDGE REPLACEMENT AND REHAB				
	WESTWOOD	BLUE HILL DR,WESTWOOD,02	006201	pg 89
INTERSTATE RESURFACING (4R)				
	CANTON	RT 128, CANTON, 02	086920	pg 58
WEYMOUTH				
CONSOLIDATED PRIMARY				
	WEYMOUTH	RT-3, WEYMOUTH, 03	109101	pg 62
INTERSTATE TRANSFER				
	WEYMOUTH	WEYMOUTH LANDING, 01	142120	pg 96
URBAN SYST BOSTON URBANIZ AREA				
	WEYMOUTH	JACKSON SQ, WEYMOUTH, 01	035570	pg 73

WILMINGTON
HWY BRIDGE REPLACEMENT AND REHAB
WILMINGTON BUTTERS ROW,WILMINGTON01 009950 pg 89
WILMINGTON EAMES ST, WILMINGTON, 01 022041 pg 89
WILMINGTON LAKE ST, WILMINGTON, 01 036981 pg 89
WILMINGTON RT 62, WILMINGTON, 01 118605 pg 90
INTERSTATE RESURFACING (4R)
WILMINGTON RT 129, WILMINGTON, 01 089200 pg 60
URBAN SYST BOSTON URBANIZ AREA
WILMINGTON RT-129, WILMINGTON, 02 089201 pg 73
WILMINGTON RT-62, WILMINGTON, 02 118606 pg 73

WINCHESTER
HAZARD ELIMINATION
WINCHESTER RT.3, WINCHESTER, 01 143201 pg 92

WINTHROP
HAZARD ELIMINATION
WINTHROP RT-145, WINTHROP, 01 093380 pg 92
URBAN SYST BOSTON URBANIZ AREA
WINTHROP VETERANS RD, WINTHROP,01 135820 pg 74

WOBURN
HWY BRIDGE REPLACEMENT AND REHAB
WOBURN NEW BOSTON ST, WOBURN,01 051200 pg 90
INTERSTATE RESURFACING (4R)
WOBURN RT I93, WOBURN, 01 072310 pg 60
URBAN SYST BOSTON URBANIZ AREA
WOBURN MISHAWUM RD, WOBURN, 02 047901 pg 74
WOBURN WASHINGTON ST, WOBURN,01 139350 pg 74

WRENTHAM
INTERSTATE RESURFACING (4R)
FRANKLIN RT I495, FRANKLIN, 04 066511 pg 58

IV.5 State Funded Highway Projects

BIKEWAY

CAMBRIDGE	MINUTEMAN BIKEWAY		Cost: 1500
%Design: 0		Work Type:	Bikeway
Design Resp:	State		
Description:	Construct 11 mile bikeway		
Work Also In:	ARLINGTON LEXINGTON BEDFORD		

NON-FEDERAL AID

ACTON	RT 27,ACTON,01	104700	Cost: 500
%Design: 75		Work Type:	Bridge reconstruction
Design Resp:	State		
Description:	Bridge A-2-37 on Main St. (Rt. 27) over Rt. 2 (concrete repairs)		

ARLINGTON	LAKE ST,ARLINGTON,01	036920	Cost: 200
%Design: 75		Work Type:	No data
Design Resp:	State		
Description:	Signalization and improvements at Rt.-2 / Lake St. interchange		
Work Also In:	BELMONT		

ARLINGTON	LOWELL ST.,ARLINGTON,01	040520	Cost: 300
%Design: 75		Work Type:	No data
Design Resp:	State		
Description:	Bridge removal, A-10-4, Lowell St. over railroad		

AVON	DIST-6	155058	Cost: 0
%Design: 0		Work Type:	No data
Design Resp:	State		
Description:	Four salt sheds, District 6, 1 Avon, 2 Braintree, 1 N. Attleboro, 1 New Bedford		
Work Also In:	BRAINTREE NORTH ATTLEBOROUGH NEW BEDFORD		

BEDFORD	ACCESS RD,MIDLSX COMM CO	000310	Cost: 0
%Design: 0		Work Type:	No data
Design Resp:	State		
Description:	Study access road from Rt. 3 to Middlesex Community College		

BELMONT	BRIDGE PAINTING,BELMONT	007779	Cost: 127

%Design: 0 Work Type: Maintenance
Design Resp: State
Description: Clean and paint bridges B-7-4 (Trapelo over railroad) and B-7-6 (Lexington St. over railroad)

BOSTON	CHARLESTOWN BRIDGE,BOST.	013515	Cost: 850

%Design: 0 Work Type: Bridge reconstruction
Design Resp: City
Description: Repairs to B-16-16 over Charles River, North Washington to Charlestown

BOSTON	DIST. 8	155016	Cost: 22

%Design: 0 Work Type: Maintenance
Design Resp: State
Description: Dewey Sq. tunnel, transformer and general repair

BOSTON	DIST.8	144405	Cost: 150

%Design: 0 Work Type: Maintenance
Design Resp: State
Description: Broadway viaduct (S. E. Expressway) replace light pole transformer bases, 37 N.B., 41 S.B.

BOSTON	DIST.8,LIGHT.MAINT.	156310	Cost: 100

%Design: 0 Work Type: Sign-light
Design Resp: State
Description: Highway lighting maintenance, District 8, Rts. I-93, 1-A, and Northeast Expressway
Work Also In: SOMERVILLE MEDFORD CHELSEA REVERE

BOSTON	FITZGRLD XWAY,BOSTON,02	025652	Cost: 0

%Design: 0 Work Type: No data
Design Resp: State
Description: Repairs to Expressway viaduct, B-16-232, from Dewey tunnel south

BOSTON	MAINT. DIST. 8	158003	Cost: 70

%Design: 0 Work Type: No data
Design Resp: State
Description: District 8 roof repairs

BOSTON	RESERVOIR RD,BOSTON,01	060100	Cost: 200

%Design: 50 Work Type: Bridge reconstruction
Design Resp: State
Description: Bridge B-16-64 over MBTA Riverside line, deck replacement

BOSTON	RT 1A,BOSTON,01	077160	Cost: 400

%Design: 0 Work Type: Resurfacing
Design Resp: State
Description: Rt-1A Addison St. to Mills Ave. Revere, Rt. 107 (Ward St., Revere to Pines bridge Saugus
Work Also In: SAUGUS REVERE

BOSTON	S.E.XWAY,RESURF.BRIDG	128255	Cost: 110

%Design: 0 Work Type: No data
Design Resp: State
Description: Resurface bridge approaches over / under S. E. Expressway
Work Also In: MILTON QUINCY

BRAINTREE	RT 128,BRAINTREE,03	086901	Cost: 200

%Design: 0 Work Type: Resurfacing
Design Resp: State
Description: Resurface old Rt. 128, Monatiquot River to Weymouth town line

BUCKLAND	RT 112,BUCKLAND,04	081102	Cost: 500

%Design: 0 Work Type: Resurfacing
Design Resp: State
Description: Resurface Rt-112 from bridge A-13-1 over Clesson Brook north to B-28-6 over Clesson Brook
Work Also In: ASHFIELD

BURLINGTON	RT.128 BURLINGTON,02	086906	Cost: 2429

%Design: 0 Work Type: Resurfacing
Design Resp: State
Description: Resurface Rt. 128 (I-95), from 3A Burlington north to Woburn / Reading town line
Work Also In: WOBURN

CHELSEA	MILL CREEK,CHELSEA,01	046720	Cost: 3300

%Design: 75 Work Type: Reconstruction
Design Resp: State
Description: Drainage improvements, Mill Creek area, Chelsea / Revere
Work Also In: REVERE

CONCORD	IMPROV. MAINT. SITE	156014	Cost: 27
%Design: 0		Work Type:	Maintenance
Design Resp: State			
Description: Paving and planting			

CONCORD	POWDER MILL RD.,CONCORD,	058340	Cost: 271
%Design: 75		Work Type:	Bridge reconstruction
Design Resp: State			
Description: Bridge removal, C-19-15, Powder Mill Road over railroad			

CONCORD	RT 62,CONCORD,01	118500	Cost: 232
%Design: 25		Work Type:	Bridge reconstruction
Design Resp: State			
Description: Bridge C-19-4 over Sudbury River			

DANVERS	DIST. 5	158008	Cost: 90
%Design: 0		Work Type:	No data
Design Resp: State			
Description: District 5, thermal windows			

DANVERS	SMOKE DETECTORS	158006	Cost: 6
%Design: 0		Work Type:	No data
Design Resp: State			
Description: District 5, smoke detectors			

DANVERS	WATER ST, DANVERS,01	139450	Cost: 83
%Design: 0		Work Type:	Traffic
Design Resp: State			
Description: Reconstruct intersection of Water St. and South Liberty St.			

DEDHAM	RT 1A,DEDHAM,02	077300	Cost: 450
%Design: 100		Work Type:	Bridge reconstruction
Design Resp: State			
Description: Bridges D-5-44 and D-5-45, Rt-1A (Washington St.) over Rt. 128 (decks)			

DEDHAM	RT 128,DEDHAM,02	087110	Cost: 250
%Design: 0		Work Type:	Bridge reconstruction
Design Resp: State			
Description: Bridge decks D-5-40 and D-5-41 on Rt-128 over Rt. 135			

DEDHAM	RT.1,DEDHAM,01	077299	Cost: 0

%Design: 0 Work Type: Maintenance
Design Resp: State
Description: Resurface and seal bridge deck (bridge #'s D-5-29, D-5-30 over High-William

DEDHAM	RT-109,DEDHAM,01	079740	Cost: 250

%Design: 0 Work Type: Resurfacing
Design Resp: State
Description: Resurface bridge St. and Ames St.

DEDHAM	RT-128,DEDHAM,05	087131	Cost: 250

%Design: 0 Work Type: Bridge reconstruction
Design Resp: State
Description: Bridge deck D-5-39 Rt-128 / I-95 S.B. over Charles River
Work Also In: NEEDHAM

DUXBURY	RT.3,DUXBURY,05	108605	Cost: 650

%Design: 0 Work Type: Resurfacing
Design Resp: State
Description: Resurface portions of Rt. 3 from Rt. 14 (Duxbury) to Norwell / Hanover town line
Work Also In: PEMBROKE MARSHFIELD NORWELL

EASTON	RT.138,EASTON,03	090599	Cost: 2500

%Design: 0 Work Type: Resurfacing
Design Resp: State
Description: Resurface Rt. 138 from Belmont St. (Easton) to Rt. 128
Work Also In: STOUGHTON

FRAMINGHAM	FOUNTAIN ST,FRAMINGHM,01	026700	Cost: 500

%Design: 25 Work Type: Bridge reconstruction
Design Resp: Town
Description: Bridge F-7-14, Fountain St. over Reservoir # 2 and Bracket Reservoir

FRAMINGHAM	RTS.9-126,FRAMINGHAM,02	086451	Cost: 93

%Design: 0 Work Type: Maintenance
Design Resp: State
Description: Chemical storage shed and site work, Rts. 9 and 126, Framingham

GLOUCESTER	BRIDGEWATER ST.,GLOUCEST	011651	Cost: 300

%Design: 0 Work Type: Bridge reconstruction
Design Resp: City
Description: Reconstruct bridge # G-5-1, Bridgewater St. over Lobster Cove

GLOUCESTER	RT.128,GLOUCESTER,02	087151	Cost: 75

%Design: 0 Work Type: Sign-light
Design Resp: State
Description: Upgrading of highway lighting system at Grant Circle on Rt. 128

HINGHAM	GEO WASH BLVD,HINGHAM,01	027900	Cost: 250

%Design: 25 Work Type: Signals
Design Resp: State
Description: George Washington Blvd. at Rockland St. (traffic signal revision)

HINGHAM	GEO WASH BLVD,HINGHAM,02	027901	Cost: 600

%Design: 0 Work Type: Resurfacing
Design Resp: State
Description: Resurface George Washington Blvd. from Rockland St. to Nantasket Ave.
Work Also In: HULL

HINGHAM	HEWITT'S COVE,HINGHAM	032051	Cost: 0

%Design: 0 Work Type: No data
Design Resp: State
Description: Reconstruct commuter boat piers

HINGHAM	RT-3A,HINGHAM,04	110061	Cost: 100

%Design: 75 Work Type: No data
Design Resp: State
Description: Remove bridge H-15-5 over Penn Central railroad on Rt-3A between Summer St. and Rockwood

HINGHAM	SUMMER ST.,HINGHAM,01	132449	Cost: 600

%Design: 0 Work Type: Resurfacing
Design Resp: State
Description: Resurface Summer and Rockland Sts.

HUDSON	CHESTNUT ST.,HUDSON,01	014201	Cost: 150

%Design: 75 Work Type: Bridge reconstruction
Design Resp: State
Description: Bridge removal H-25-11, Chestnut St. over railroad

IPSWICH	GOULD'S CREEK BR,01	028650	Cost: 250

%Design: 0 Work Type: Reconstruction
Design Resp: City
Description: Gould's Creek bridge # I-1-3 (Ipswich) on Labor-in-Vain Road

MARBLEHEAD	MARBLEHEAD, 2 LOCS,01	043390	Cost: 1000

%Design: 25 Work Type: Reconstruction
Design Resp: Town
Description: Reconstruct West Shore Drive and Green St.

MEDFORD	RIVERSIDE AVE.MEDFORD,01	061040	Cost: 250

%Design: 0 Work Type: Bridge reconstruction
Design Resp: State
Description: Bridge M-12-25, I-93 over Riverside Ave., pier cap repairs

MEDFORD	RT.I-93,MEDFORD,06	071708	Cost: 0

%Design: 0 Work Type: Signals
Design Resp: State
Description: Traffic signals reconstruction (#8-846) I-93, on / off ramps, (Rt. 38), Medford

MIDDLETON	RT 114,MIDDLETON,01	081780	Cost: 125

%Design: 0 Work Type: No data
Design Resp: State
Description: Reconstruct Rt-114 from Station 21 + 75 to Station 25 + 00

MILLIS	MILLIS, ONE LOCATION,01	047502	Cost: 400

%Design: 75 Work Type: Reconstruction
Design Resp: Town
Description: Reconstruct intersection of Pleasant and Village Sts.

MILTON	DIST. 8,GUARDRAIL REPAIR	030329	Cost: 150

%Design: 0 Work Type: Guardrail
Design Resp: State
Description: Repair guardrail, various routes, District 8
Work Also In: QUINCY MEDFORD REVERE CHELSEA BOSTON SAUGUS

MILTON	RT 28,MILTON,02	106901	Cost: 2000

%Design: 0 Work Type: Reconstruction
Design Resp: State
Description: Resurface Rt. 28 from Reedsdale Road to Station 12 + 50 in Quincy
Work Also In: QUINCY

MILTON	RT 37,MILTON,01	112120	Cost: 240

%Design: 75 Work Type: Resurfacing
Design Resp: State
Description: Resurface Rt. 37 (Granite Ave.) Squantum St. to Granite Ave. drawbridge

MILTON	RT.138,MILTON,01	087801	Cost: 50

%Design: 0 Work Type: Maintenance
Design Resp: State
Description: Drainage improvements Rt. 138, from Station 13 + 00 to 21 + 00, Canton Ave. - B. H. Road

NEWTON	DEDHAM ST., NEWTON,01	019050	Cost: 0

%Design: 75 Work Type: Signals
Design Resp: State
Description: Traffic signals at Dedham St. / Winchester St.

NEWTON	NEEDHAM ST., NEWTON,01	051650	Cost: 0

%Design: 75 Work Type: Signals
Design Resp: State
Description: Traffic signals at Needham, Oak, and Christina Sts.

NEWTON	RT-16, NEWTON,02	094801	Cost: 0

%Design: 75 Work Type: Signals
Design Resp: State
Description: Traffic signals at Route 16 and Wales Road

NORTH ANDOVER	TRAFFIC SIGNALS(DIST.5)	134505	Cost: 70

%Design: 0 Work Type: Signals
Design Resp: State
Description: Update existing traffic signals, District 5 (8 locations)
Work Also In: TOPSFIELD PEABODY LYNNFIELD NEWBURYPORT

NORTH ATTLEBOROUGH	REST AREAS,STATEWIDE,01	060150	Cost: 0

%Design: 0 Work Type: Reconstruction
Design Resp: State
Description: Upgrade 6 existing rest areas with restroom facilities, etc.
Work Also In: CHELMSFORD NORWELL TEMPLETON

NORTH READING	RT 28, NORTH READING,02	107001	Cost: 220

%Design: 75 Work Type: No data
Design Resp: State
Description: Reconstruct intersection of Rt-28 and Park street

NORWELL	RT 53,NORWELL,02	114901	Cost: 700

%Design: 0 Work Type: Resurfacing
Design Resp: State
Description: Resurface Rt-53 from Hanover to Hingham

NORWOOD	NEPONSET ST,NORWOOD,01	050910	Cost: 60

%Design: 0 Work Type: Reconstruction
Design Resp: State
Description: Traffic signals at Wedgewwod Dr. and Neponset St.

NORWOOD	RT 1A,NORWOOD,03	077560	Cost: 200

%Design: 10 Work Type: Reconstruction
Design Resp: State
Description: Reconstruct Walpole St. (Rt. 1A for discontinuance by state

QUINCY	RT.128,QUINCY,RAND.+ BRA	087903	Cost: 1600

%Design: 0 Work Type: Maintenance
Design Resp: State
Description: Resurfacing and related work Rt. 128 Braintree, ending in Randolph including ramps
Work Also In: RANDOLPH BRAINTREE

RANDOLPH	RT 128,RANDOLPH,03	087901	Cost: 600

%Design: 0 Work Type: Bridge reconstruction
Design Resp: State
Description: Bridge deck replace, Rt. 128 over Rt. 24, R-1-5 and R-1-7

RANDOLPH	RT 28,RANDOLPH,02	107303	Cost: 30
%Design: 0		Work Type: Maintenance	
Design Resp: State			
Description: Cooperative sidewalk			

RANDOLPH	RT.128,RANDOLPH,04	087902	Cost: 1600
%Design: 75		Work Type: Resurfacing	
Design Resp: State			
Description: Resurface Rt. 128 (I-93), from Rt. 24 Randolph to Rt. 3, Braintree			
Work Also In: QUINCY BRAINTREE			

REVERE	DIST.8 MAINT.	030330	Cost: 212
%Design: 0		Work Type: Guardrail	
Design Resp: State			
Description: Proposed installation of new guard rail Rt. 1 in Revere, Malden and Saugus			
Work Also In: MALDEN SAUGUS			

REVERE	N.E.XWY.-RT.I-93	077880	Cost: 209
%Design: 0		Work Type: Maintenance	
Design Resp: State			
Description: Coping and wall improvement N. E. Expressway and I-93, Revere, Chelsea and Medford			
Work Also In: CHELSEA MEDFORD			

REVERE	RT 1-A,REVERE,09	077876	Cost: 100
%Design: 0		Work Type: No data	
Design Resp: State			
Description: Replacement of arch culvert at Station 94 + 81 on Rt-1A			

REVERE	RT 1,REVERE,06	076505	Cost: 248
%Design: 75		Work Type: Maintenance	
Design Resp: State			
Description: Drainage improvements along Rt. 1 and Northeast Expressway to toe of slope, both roadways			

REVERE	RT 1A,REVERE,06	077865	Cost: 230
%Design: 75		Work Type: Resurfacing	
Design Resp: State			
Description: Resurface (3/4'), Winthrop Ave. to Broadway rotary			

REVERE	RT 1A,REVERE,08	077875	Cost: 400

%Design: 75 Work Type: Resurfacing
Design Resp: State
Description: Resurface Rt. 1-A, Beach St. rotary to Butler rotary

REVERE	STA SIG UPD,DIST.8,02	131382	Cost: 105

%Design: 75 Work Type: Signals
Design Resp: State
Description: Traffic signal reconstruction of Rt. 1A at Revere St. and Oak Island St. (Revere) Rt-107 at Ballard St., Saugus
Work Also In: SAUGUS

SALEM	RT.107,SALEM,01	005406	Cost: 200

%Design: 0 Work Type: Maintenance
Design Resp: State
Description: Rt. 107 Salem, (Station 35 + 00 junction Barcel. Ave. to Station 45 + 00 Swampscott Ave.)

SAUGUS	RT 99,SAUGUS,01	125850	Cost: 320

%Design: 0 Work Type: Resurfacing
Design Resp: State
Description: Rt. 99, Rt. 1, Defranzo rotary, Saugus to end of District, Station 1 + 40 Malden
Work Also In: MALDEN

SAUGUS	RT.1,SAUGUS,01	125855	Cost: 300

%Design: 0 Work Type: Reconstruction
Design Resp: State
Description: Median and median barrier reconstruction
Work Also In: LYNNFIELD

SAUGUS	RT.1,SAUGUS,01	024720	Cost: 300

%Design: 0 Work Type: Reconstruction
Design Resp: State
Description: Median and median barrier reconstruction
Work Also In: LYNNFIELD

SCITUATE	STOCKBRIDGE RD,SCITUATE	131490	Cost: 60

%Design: 0 Work Type: Bridge reconstruction
Design Resp: State
Description: Bridge improvements (bridge S-7-5) over Penn. Central railroad

SOUTHBOROUGH	RT 9,SOUTHBORO,01	125170	Cost: 30

%Design: 50 Work Type: Traffic
Design Resp: State
Description: Signalize intersection of Rt. 9 and White Bagley / Breakneck Road completed

STONEHAM	MAPLE ST.STONEHAM,01	043350	Cost: 0

%Design: 0 Work Type: No data
Design Resp: State
Description: Force account replacement of box culvert, Maple St. over Sweetwater Brook

STONEHAM	SUMMER ST.,STONEHAM,01	132750	Cost: 150

%Design: 0 Work Type: Signals
Design Resp: Town
Description: Installation of signals and improvements at Summer St. / Pond St. intersection

STOUGHTON	RT 24,STOUGHTON,01	104170	Cost: 1000

%Design: 0 Work Type: Bridge reconstruction
Design Resp: State
Description: Bridge deck replacement, Rt. 24 over Page St.

SWAMPSCOTT	DIST.5,(7)LOCATIONS	158010	Cost: 85

%Design: 0 Work Type: Signals
Design Resp: State
Description: Traffic signal upddate, 7 locations Swampscott (2), Salem (3), Gloucester (2)
Work Also In: SALEM GLOUCESTER

TOPSFIELD	RT.1,TOPSFIELD,01	076703	Cost: 1500

%Design: 0 Work Type: Maintenance
Design Resp: State
Description: Beginning Station 184 + 00 Ipswich Road Topsfield, north to Station 186 + 67, ROW / new
Work Also In: IPSWICH ROWLEY

WESTON	CONANT RD, WESTON,01	016460	Cost: 150

%Design: 0 Work Type: Bridge reconstruction
Design Resp: State
Description: Bridge removal W-29-2, Conant Road over railroad

WESTON	CONCORD RD,WESTON,01	016551	Cost: 150
%Design: 0		Work Type:	Bridge reconstruction
Design Resp:	State		
Description:	Bridge removal, W-29-4, Concord Road over railroad		

WESTWOOD	RT 128,WESTWOOD,02	088960	Cost: 250
%Design: 0		Work Type:	Bridge reconstruction
Design Resp:	State		
Description:	Bridge W-31-5 Rt-128-- over railroad (north bound)		

WESTWOOD	RT 128,WESTWOOD,03	088961	Cost: 250
%Design: 0		Work Type:	Bridge reconstruction
Design Resp:	State		
Description:	Bridge W-31-13, Rt-128 over railroad (deck replacement)		

WEYMOUTH	PARK AV.+ PLEASANT,WEYMO	142121	Cost: 50
%Design: 0		Work Type:	Signals
Design Resp:	State		
Description:	Update traffic signals at intersection of Park Ave. and Pleasant Sts. Weymouth		

WILMINGTON	HIGH ST.,WILMINGTON,01	032420	Cost: 0
%Design: 0		Work Type:	Reconstruction
Design Resp:	State		
Description:	Reconstruct portion of High St.		

WILMINGTON	RT-125,WILMINGTON,01	086151	Cost: 850
%Design: 0		Work Type:	Reconstruction
Design Resp:	State		
Description:	Planning study of Route-125 from I-93 / 125 to Rt-28, Andover		
Work Also In:	ANDOVER		

WOBURN	RT-I-93,WOBURN,02	072311	Cost: 250
%Design: 0		Work Type:	Bridge reconstruction
Design Resp:	State		
Description:	Bridge dam repairs, W-43-36, Rt-I-93 over Montvale Ave.		

WRENTHAM	RT 1,WRENTHAM,02	076708	Cost: 6
%Design: 0		Work Type:	Reconstruction
Design Resp:	State		
Description:	Install flashing beacon light at Rt. 1 and Thurston St.		

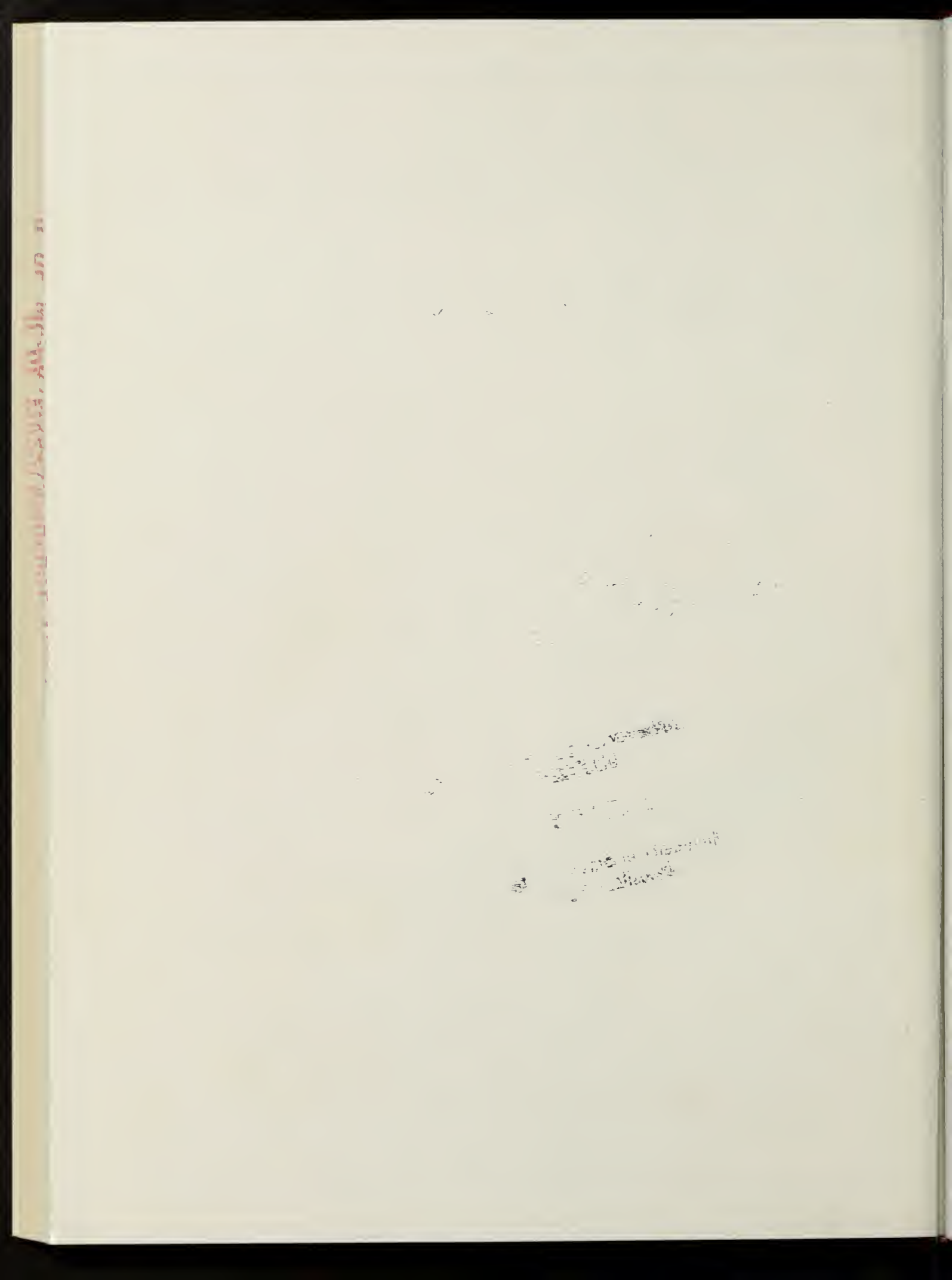
STATE AID

HOLLISTON	NORFOLK ST,HOLLISTON,01	051703	Cost: 0
%Design: 0		Work Type:	Reconstruction
Design Resp:	State		
Description:	Reconstruct Norfolk Street		

MALDEN	WASHINGTON ST,MALDEN,01	139000	Cost: 140
%Design: 0		Work Type:	Resurfacing
Design Resp:	State		
Description:	Washington St. from Clifton St., and Dutton St. to Melrose town line (state aid)		

SHERBORN	COOLIDGE ST,SHERBORN,01	017110	Cost: 150
%Design: 50		Work Type:	Reconstruction
Design Resp:	State		
Description:	Coolidge St., Kendall Ave. and Speen St. (intersection and approaches)		

WOBURN	WYMAN ST.WOBURN,01	144000	Cost: 500
%Design: 90		Work Type:	Reconstruction
Design Resp:	State		
Description:	Burlington town line to Lowell St. (near Rt. 38) (state aid)		



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